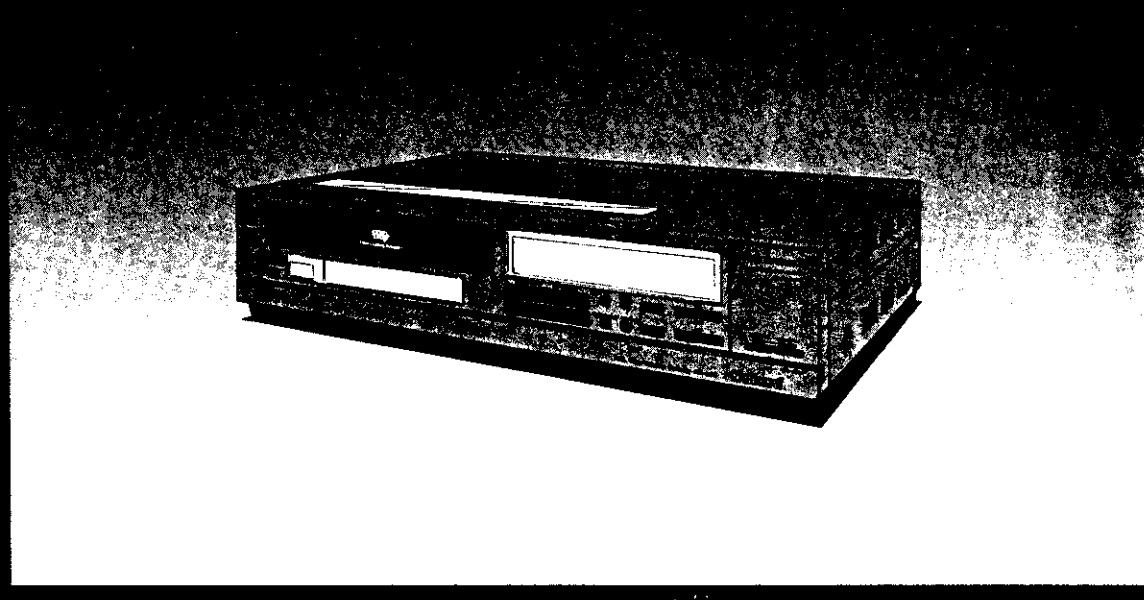
Operating Instructions

VHS PAL Hi-Fi HQ



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IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

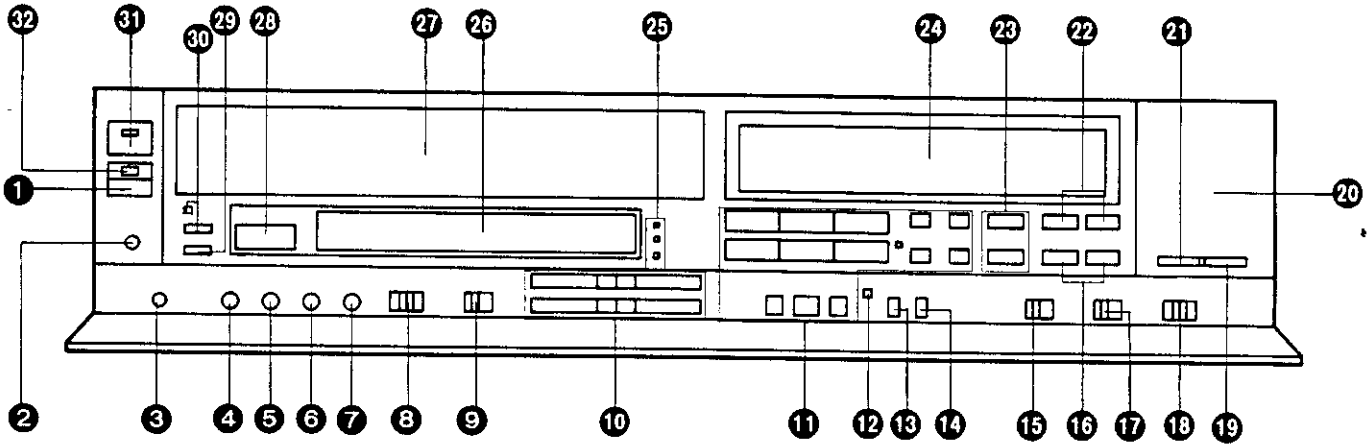
NV-H70A: Australian model
NV-H70EA: New Zealand model

FOR YOUR SAFETY

■ **DO NOT REMOVE OUTER COVER.**
To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

CONTROLS AND COMPONENTS

FRONT



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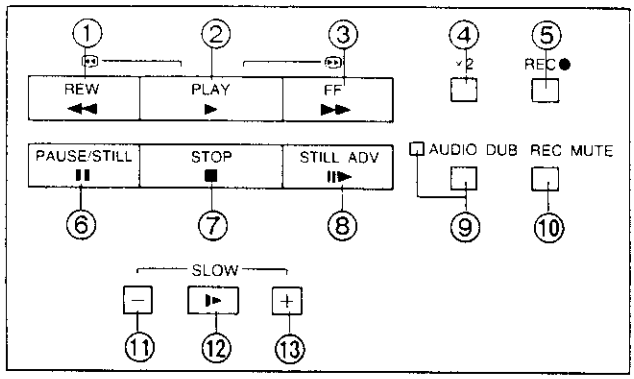

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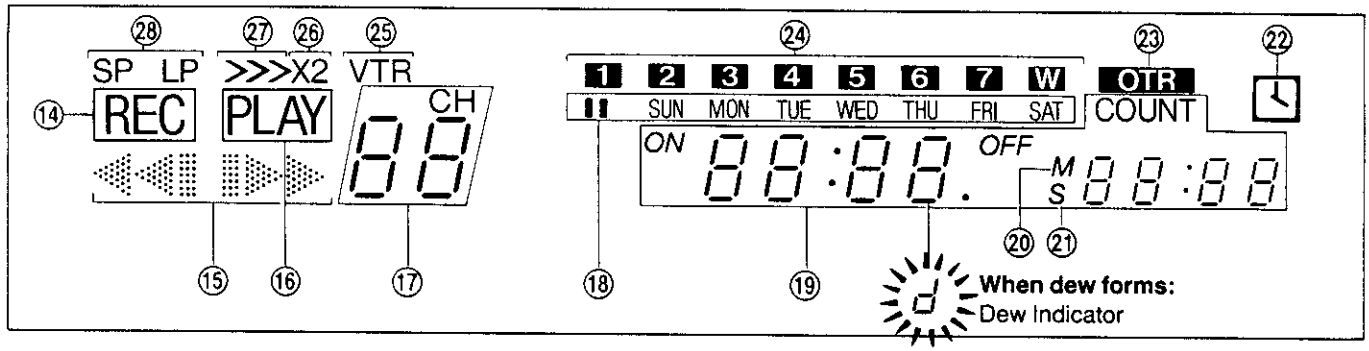
㉔ Multi Function Display



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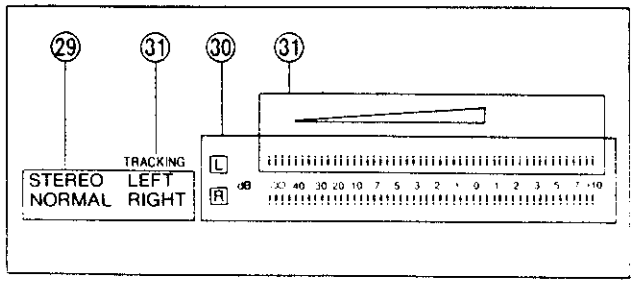

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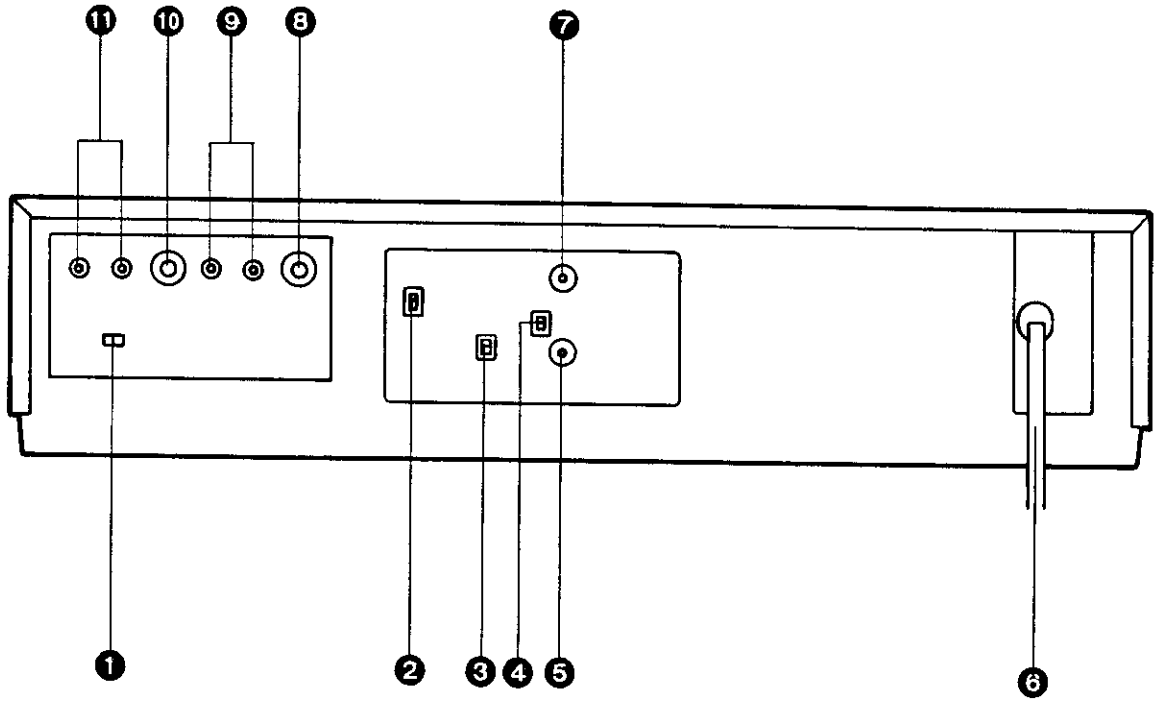

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FEATURES

Hi-Fi Stereo System

The revolutionary newly developed hi-fi stereo recording system features two rotary audio heads arranged on the video head cylinder and an FM conversion recording method. The result of this innovative system is superb sound quality with a dynamic range of 90 dB, wide frequency response from 20 Hz to 20 kHz and 0.005% wow and flutter.

Use as a High-Quality Audio Cassette Recorder

The excellent audio quality, outstanding tape economy, continuous 8-hour audio recording capability, Audio Rec Level Control and Audio Rec Level Meter make this VTR ideal for use as a top-quality audio cassette recorder.

Recording and Playback of "Simulcast" Sound

This VTR allows recording and playback of the stereo sound of TV programmes broadcast via "Simulcast" by connecting an FM tuner to the Audio Input Sockets.

Recording and Playback of Stereo, Bilingual and Monaural TV Programmes (NV-HX10EA: Playback only)

The new Hi-Fi stereo system in combination with the built-in multiplex tuner can process audio two-channel as well as monaural signals for both recording and playback. Even if the TV set used is of the mono type, stereo or bilingual sound of recorded programmes or sound of TV programmes, being received on the VTR tuner and played back through the TV set can be reproduced via a connected hi-fi stereo system with external speakers.

[illegible] up to 16 TV Stations

The built-in tuner in this VTR allows pre-tuning of as many as 16 TV stations. So this VTR can accommodate virtually any increase in available TV programmes in the future.

[illegible]

Whenever an operation button is pressed, the activated function is immediately indicated on this easy-to-see display. It shows you at a glance, in what operation mode the VTR is functioning.

[illegible]

This VTR features the convenient Tape Programme Search function that allows you to directly locate any of up to 9 addresses (soundless portions marking the start of programmes) in forward or reverse direction during Cue or Review playback by skipping the programmes in between.

Auto Operation

This VTR automatically turns itself on when a video cassette is inserted even if it was turned off. When the tab of the inserted cassette is broken out, playback will start automatically. Also, even if the VTR is off when the Eject Button is pressed, it automatically turns itself on to eject the cassette tape and it turns itself off again.
When a video cassette tape with a broken out tab is inserted and the VTR is switched over to recording, OTR or timer recording, the cassette tape will be automatically ejected.
When the tape reaches its end (except during OTR and timer recording), it will automatically rewind to the beginning.

Super Still, Super Still Advance and Super Fine Slow Playback

Super Still, Super Still Advance and Super Fine Slow Playback are possible with superb picture quality with minimum noise and jitter.

Super OTR Function (One-Touch Timer Recording)

This convenient function makes it possible to easily programme the VTR for recording of TV programmes with immediate start or with start within 24 hours and with the starting time and ending time precisely set to the desired minute. When the recording ends, the VTR will automatically turn itself off.

14-Day, 8-Programme Timer

The built-in timer allows automatic absentee recording of up to 8 TV programmes within 14 days. It is also possible to record a programme which is broadcast at the same time every day or every week.

Infra-red Remote Controller

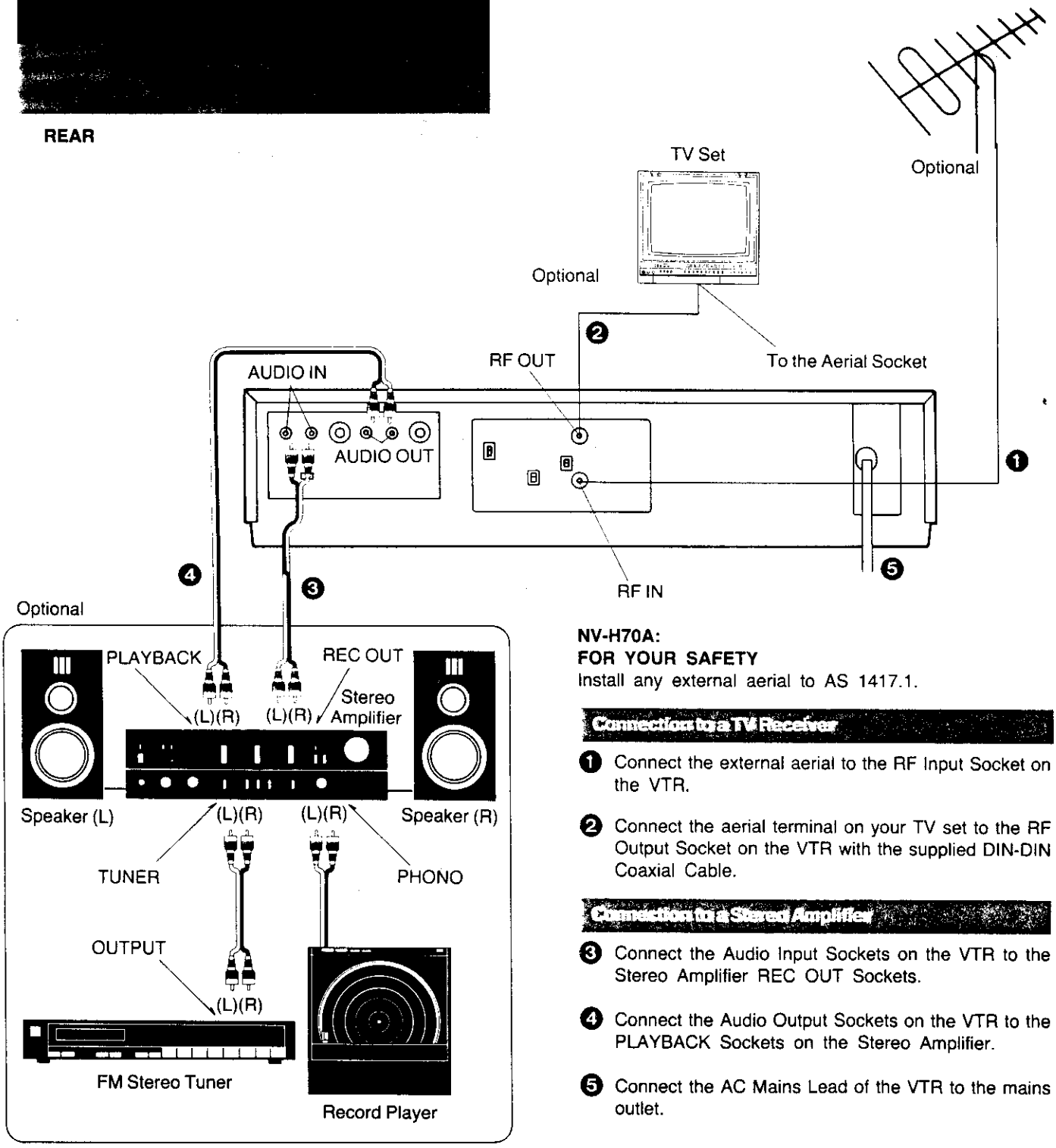
The Infra-red Remote Controller unit allows operation of various functions from the comfort of your favourite viewing position.

HQ (High Quality) Picture System

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

INSTALLATION

REAR



NV-H70A:
FOR YOUR SAFETY
Install any external aerial to AS 1417.1.

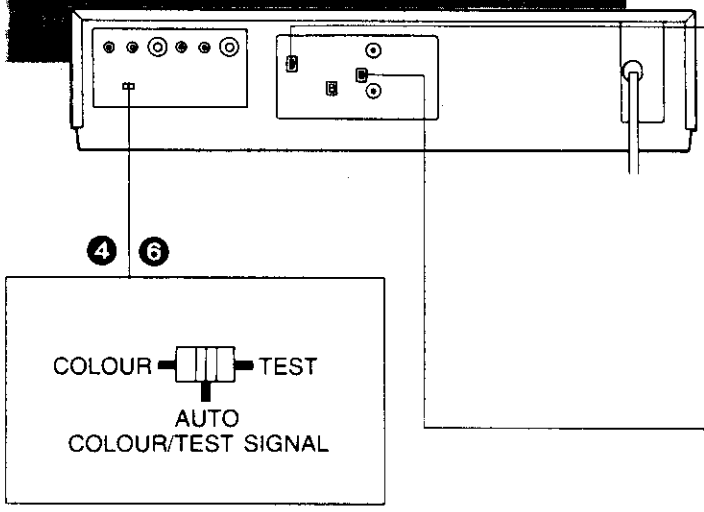
Connection to a TV Receiver

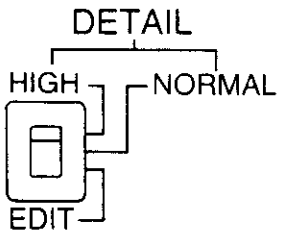
1. Connect the external aerial to the RF Input Socket on the VTR.
2. Connect the aerial terminal on your TV set to the RF Output Socket on the VTR with the supplied DIN-DIN Coaxial Cable.

Connection to a Stereo Amplifier

3. Connect the Audio Input Sockets on the VTR to the Stereo Amplifier REC OUT Sockets.
4. Connect the Audio Output Sockets on the VTR to the PLAYBACK Sockets on the Stereo Amplifier.
5. Connect the AC Mains Lead of the VTR to the mains outlet.

TUNING THE TV SET TO THE VIDEO PLAYBACK CHANNEL



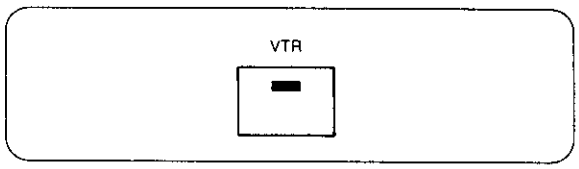


Picture Detail Enhancer/Edit Selector
For recording of TV programmes, this switch can be set to the HIGH position to enhance overall picture crispness and detail as well as to improve the legibility of characters and figures. When the reception signal is weak, this switch must be set to the NORMAL position.
The position of this selector has no influence on the playback.
When using this VTR for dubbing, set this switch to the EDIT position.

RF Signal Level Switch:
Used to attenuate the reception of the VHF and/or UHF aerial signals. If the reception is normal, set to "HIGH". If the signal is strong (stripes appear in the upper part of the picture), set to "LOW".

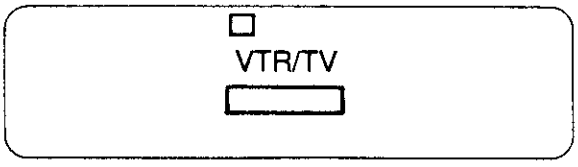
❶ Turn the TV set on and select the AV programme position or another programme position that is not occupied by any TV station.

❷ Press the VTR On/Off Switch to turn the VTR On.
(FRONT SIDE)



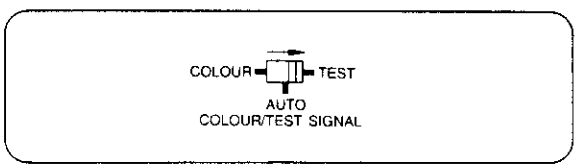
•The corresponding indicator lights up.

❸ Press the VTR/TV Selector to "VTR" position.
(FRONT SIDE)



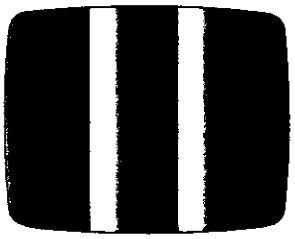
•VTR Indicator will appear in the Multi-Function Display.

❹ Set the Colour Mode/Test Signal Switch to "TEST".
(REAR SIDE)



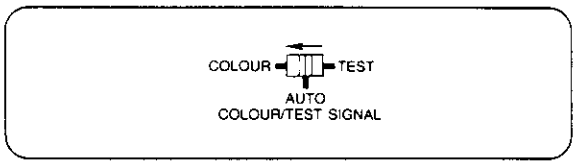
❺ Tune your TV to VHF channel as shown below. Confirm by your TV that the received test pattern is as shown below.

NV-H70A	VHF channel 0 or 1*
NV-H70EA	VHF channel 2 or 3



NV-H70A only
*In some areas CH. 0 may be used local TV station.
In this case switch to CH.1.

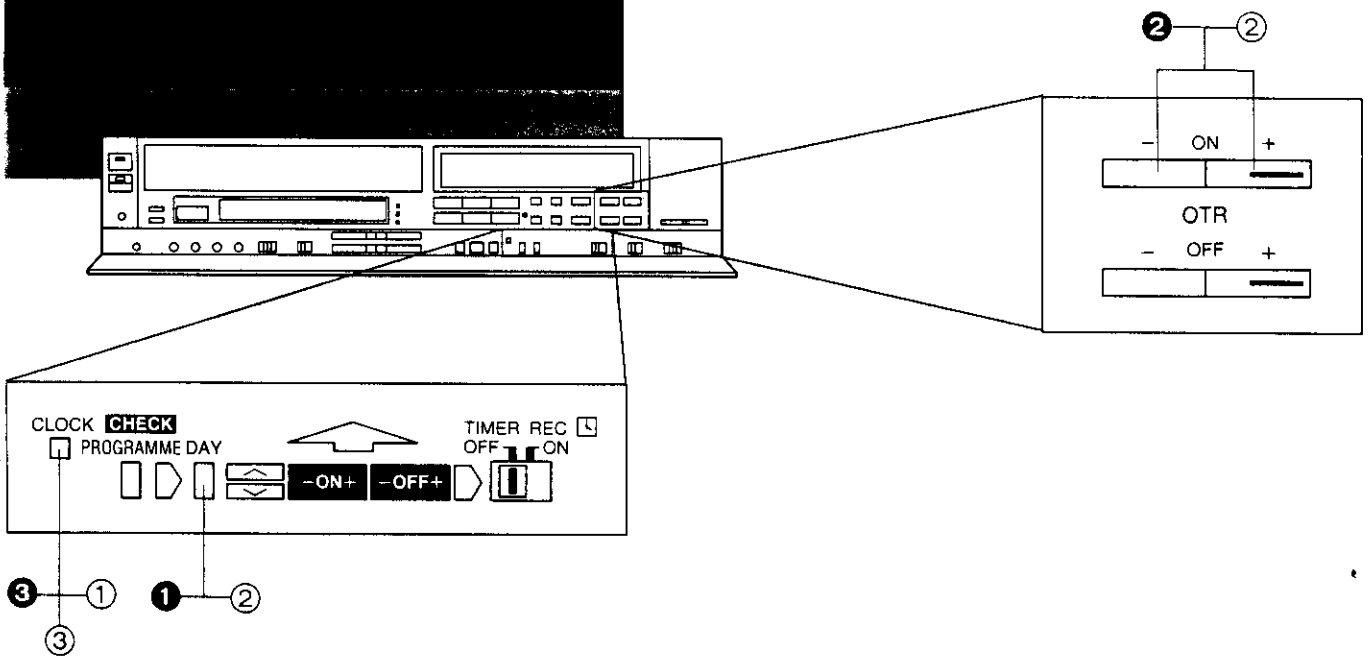
❻ Set the Colour Mode/Test Signal Switch to "AUTO". Your TV is now ready to receive the RF output signal from the VTR.



•If, during recording or playback, the colour is not satisfactory, it can be stabilized by setting Colour Mode/Test Signal Switch to COLOUR.

SETTING THE CLOCK TO THE PRESENT TIME

The built-in digital clock employs the 24-hour system.

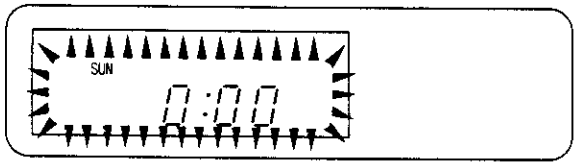


For Example: Setting the Clock to "MON 9:05"

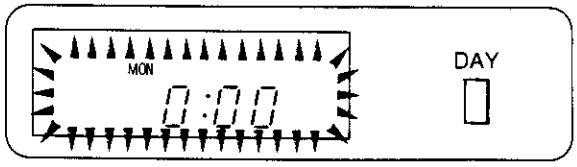
(The present time is 9:04 on Monday morning.)

- Connect the VTR to the mains outlet.
- Press the VTR On/Off Switch to turn the VTR On.
- Open the Controls cover.

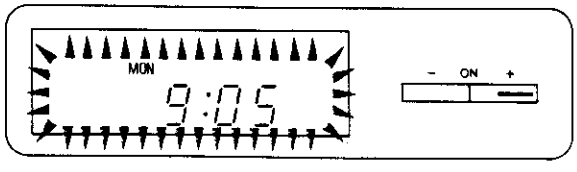
Initially, the time display flashes as shown below:



❶ Press the Day Button to set "MON". (SUN→MON→TUE...)



❷ Press the Timer/OTR On (+) or (−) Button to set "9:05".
⊕ (00→01→02→03...) ⊖ (00→59→58→57...)
When the Timer/OTR On (+) or (−) Button is pressed quickly and repeatedly, the indication will change in 1-minute steps. When it is kept pressed, the indication will change in 10-minute steps.



❸ Press the Clock Button when the present time becomes 9:05'00".
The clock will start from "00" seconds, however, the seconds will not be displayed.

How to Reset the Clock

- Press the VTR On/Off Switch to turn the VTR On.
- Open the Controls cover.

① Press the Clock Button.
- A clock indication starts to flash.

② Adjust the clock to the accurate time by pressing the Day Button and Timer/OTR On (+) or (−) Button.

③ After the precise time is set, press the Clock Button.

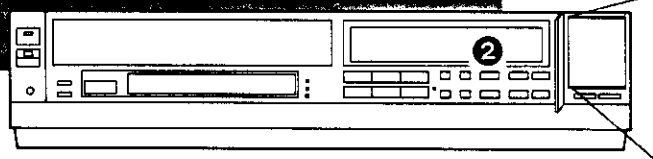
Note:

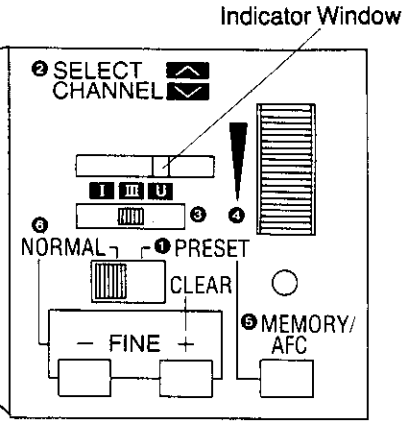
- The timer back-up system maintains the clock operation for about 60 minutes in case of a power failure. However, it takes more than 60 minutes for back-up circuit to become operational, after the VTR is connected to the mains.
- The "Timer Record" Switch should be set to "Off", otherwise the VTR cannot be operated normally. In this case, the Timer Record Indicator "◷" will flash to warn you.

SETTING THE TUNER IN THE VTR

The tuner in the VTR makes it possible to receive TV broadcasts and to record these programmes without having to turn on the TV set. The reception channels in the TV bands shown on the right can be received.

	VHF		UHF
	I	III	U
NV-H70A	0–5	5A–11	21–69
NV-H70EA	1–3	4–11	21–69





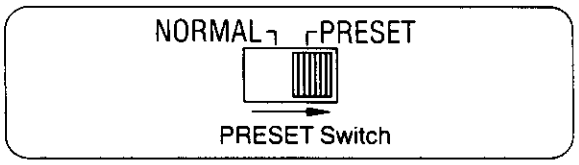
The tuner in the VTR can be preset for up to 16 stations.

Preparation

- Turn the TV set on and select the programme position (channel) which you have tuned to the video playback channel.
- Press the VTR On/Off Switch to turn the VTR On.
- Set the Input Signal Selector to "Tuner".
- Open the Tuner Set-up Control cover.
- Press the VTR/TV Selector to "VTR" position.

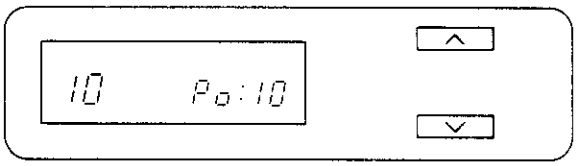
Tuning Procedure

❶ Set the Preset Switch to "Preset".



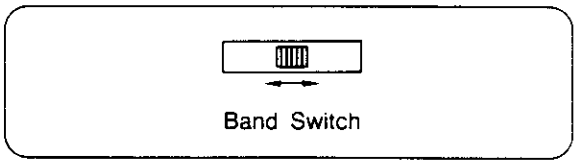
PRESET Switch

❷ Press the Channel Up or Down Button to select a programme position (channel) which you want to tune to a TV station.



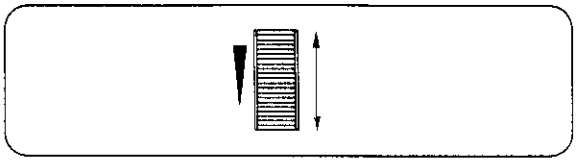
For all channel positions, on which no stations are to be preset, press the Clear Button, and "--" will be indicated in the channel display.
After presetting, these channels will be skipped during channel selection and cannot be selected.

❸ Set the Band Switch to "I", "III" or "U".



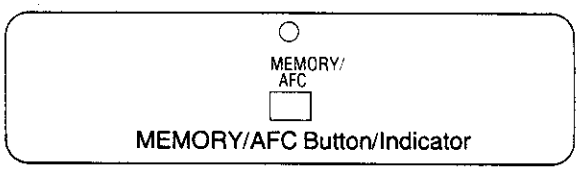
Band Switch

❹ Turn the tuning control until the picture and the sound from the desired TV station is received on your TV set is satisfactory.



- The indicator in the window shows the approximate position within the tuning range.

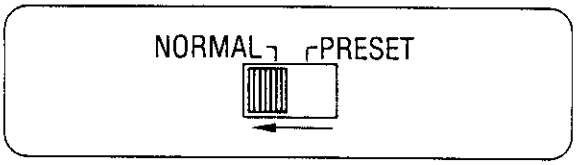
❺ Press the Memory/AFC Button (the indicator lights up).



MEMORY/AFC Button/Indicator

Repeat steps ❷–❺ for each programme position (channel) you want to tune.

❻ Set the Preset Switch to "Normal".

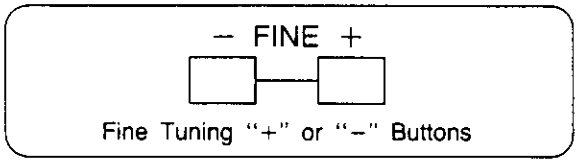


[illegible]

(If the reception of a station is unsatisfactory.)

① Ensure the Preset Switch is set to "Normal".

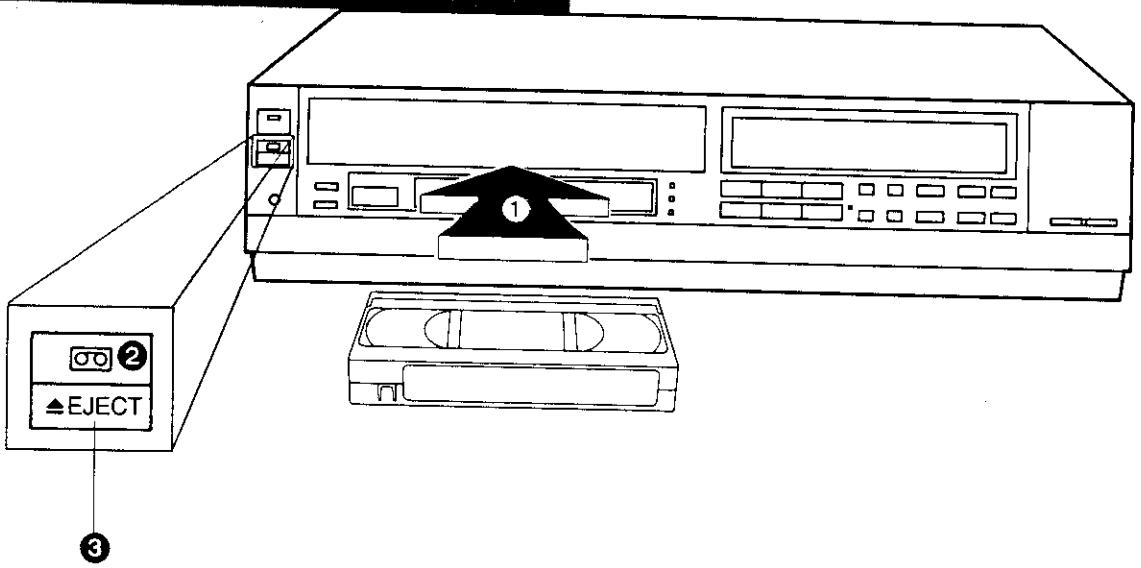
② Press the Fine Tuning "+" or "–" Button.



Fine Tuning "+" or "–" Buttons

- To return the tuning to its former state, press the Memory/AFC Button.

THE VIDEO CASSETTE



Inserting a Video Cassette (Auto Operation)

❶ Insert the video cassette as shown. The VTR will be turned on automatically and the cassette will automatically be drawn into the VTR.

❷ When a video cassette is inserted, the "▭" mark will appear.

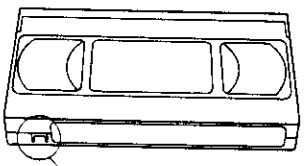
Note:

- When a video cassette with broken out erasure prevention tab (for example a pre-recorded tape) is inserted, playback will start immediately.
- Use VHS video cassette tapes only.

Removing a Video Cassette

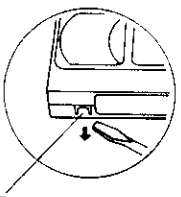
❸ Press the Eject Button (▲).

Even if the VTR is off, the VTR automatically turns itself on when the Eject Button is pressed, and the cassette tape is ejected. After that, the VTR will turn itself off again.



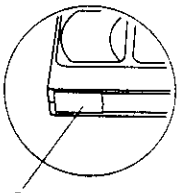
Erasure Prevention Tab

To prevent accidental erasure



Break off the tab with a screwdriver.

To record again

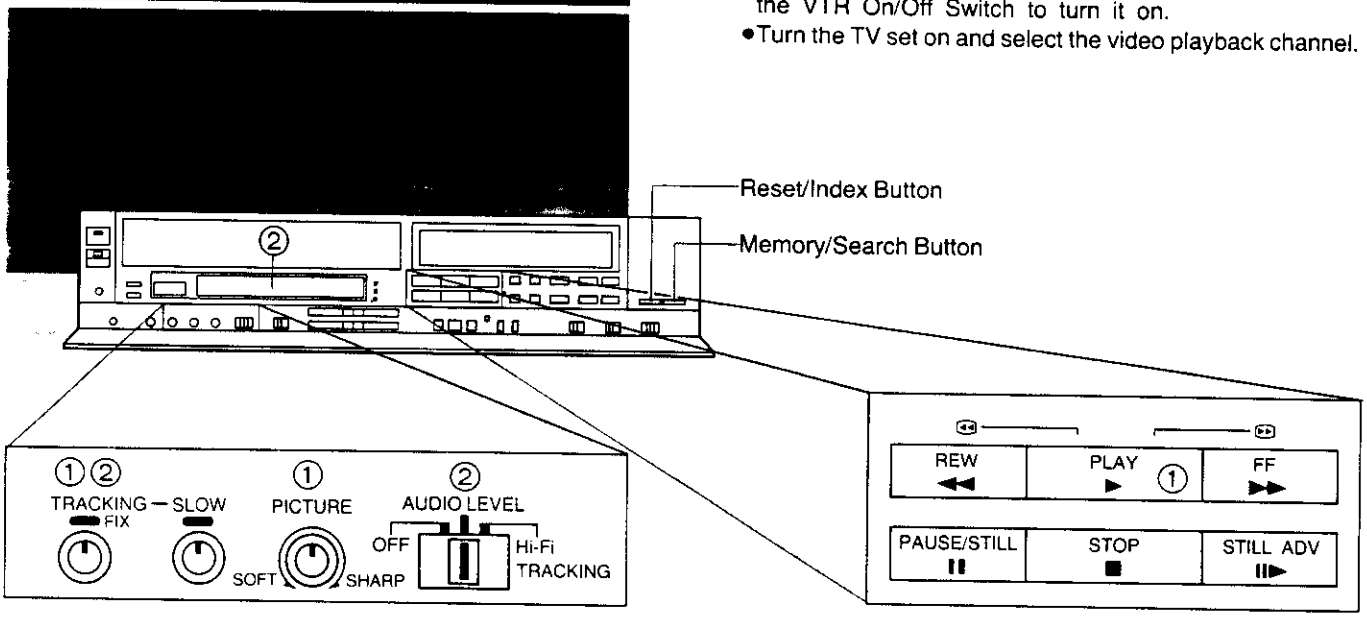


Cover the hole with adhesive tape.

PLAYBACK

Preparation

- Make sure that the "Timer Record" Switch is set to "Off".
- Insert a recorded video cassette.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Turn the TV set on and select the video playback channel.

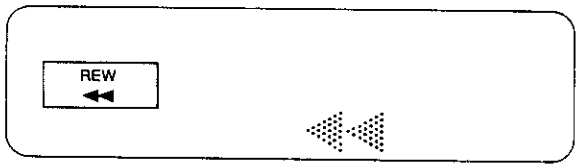


Auto Operation

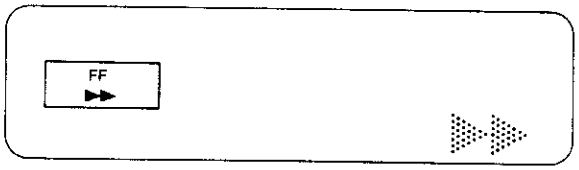
When a video cassette which has the erasure prevention tab removed is inserted, playback will start automatically.

Rewind and Fast Forward

Press the Rewind ◀◀/Review ⏪ Button to rewind the tape.

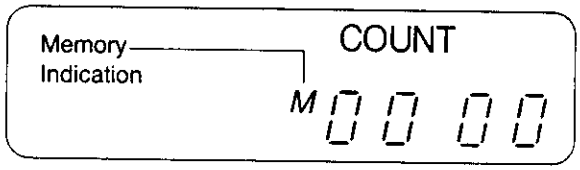


Press the Fast Forward ▶▶/Cue ⏩ Button to wind the tape forward rapidly.



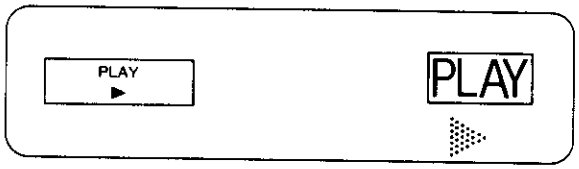
Memory Function

The Memory function makes it simple and fast to find a certain position on the tape later again, simply by pressing the Reset/Index Button at that position to set the tape counter to "0000" and by pressing the Memory/Search Button. During Rewind or Fast Forward, the tape will then stop at approximately the desired position.



① Normal Playback

Press the Play Button (▶).



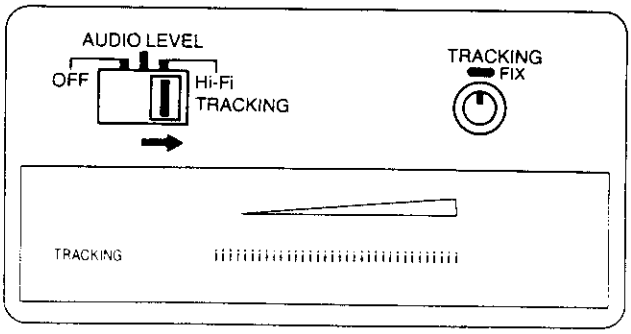
- Adjust the Tracking Control on the VTR if the image is partially obscured by bands of noise.
- Control the picture as you like with the Picture Sharpness Control (sharp or soft contours).

NV-H70EA only

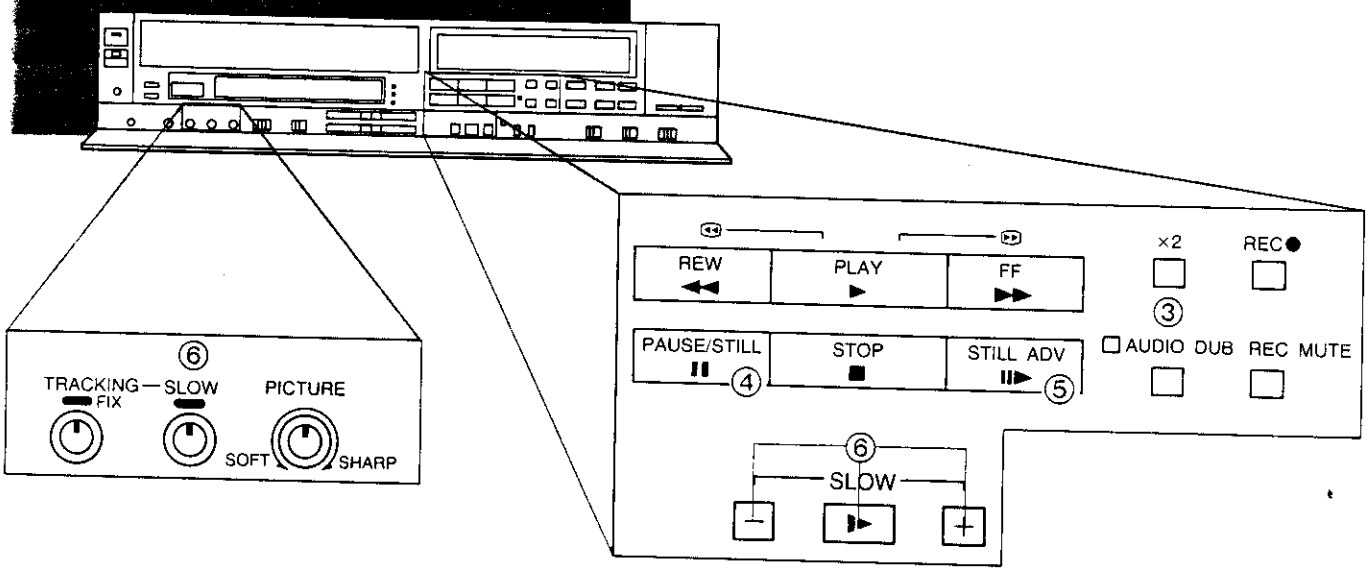
When playing back off-air recordings of mono TV Programmes, the "Stereo" indicator in the Audio Playback Mode Indicators will light up, this is only to confirm that the sound is being reproduced from the hi-fi audio tracks and does not infer that the recording is necessarily in stereo.

② [illegible]

This adjustment may be necessary when playing back a tape which was recorded on another hi-fi VTR.
Set the Audio Level Meter Selector to "Hi-Fi Tracking" and slowly slide the Tracking Control while observing the Audio Level Meter, for highest possible meter Indication.

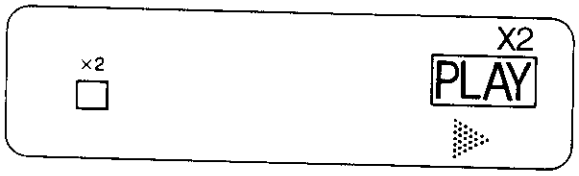


PLAYBACK (CONT'D)



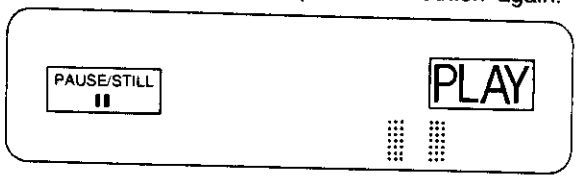
③ Double Speed Playback

When the VTR is in the playback mode, press the Double Speed Playback Button to view a double speed playback picture. To continue the normal playback, press the Play Button.



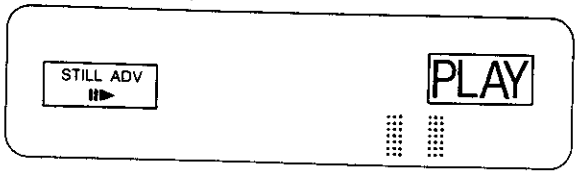
④ Super Still Playback

When the VTR is in the playback mode, press the Pause/Still Button (❚❚) to view a super still-picture. To continue the normal playback, press this button again.



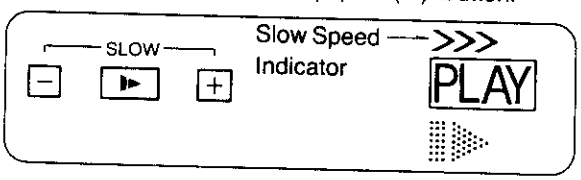
⑤ Super Still Advance Playback

During still playback mode, press the Still Advance Button (▮▶). Each time you press this button, the still-picture will advance one frame. A slow motion effect (about 1/40 speed of normal playback) can be obtained by keeping the Still Advance Button (▮▶) pressed.



⑥ Super Fine Slow Playback

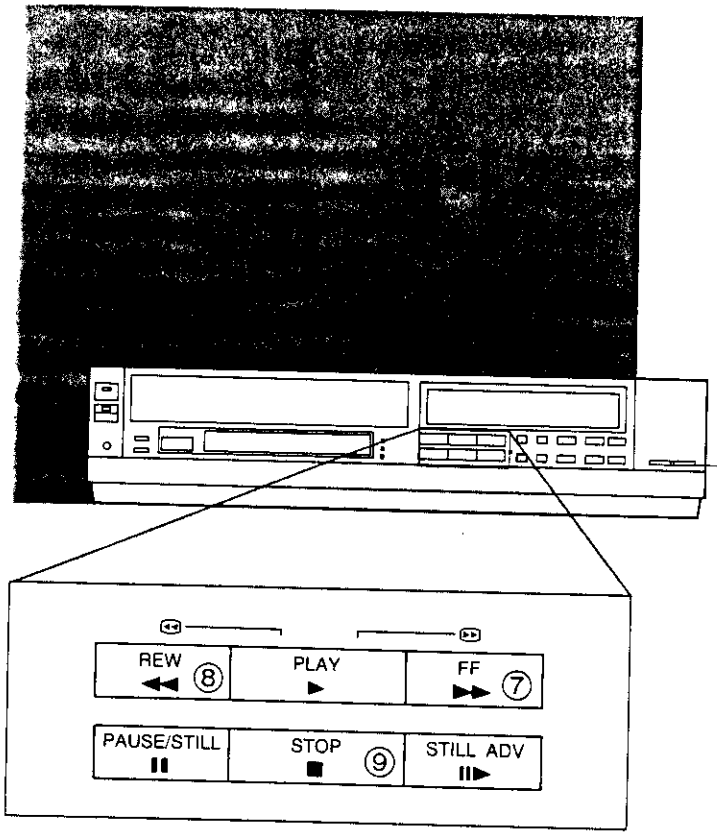
During normal playback, the Slow-motion playback can be activated by pressing the Slow Button (▮▶). Slow-motion playback between 1/25 and 1/8 of the normal speed can then be obtained by using the Slow (+) or (–) Button.



- Press the Play Button (▶) to continue the normal playback.
- If the Slow playback operation continues for more than 10 minutes, the VTR automatically switches over to the stop mode.
- While playing back a tape in the Super Still or Super Fine Slow playback mode on a TV set equipped with an automatic vertical hold control, the picture may shake vertically. In this case, set the TV set's vertical hold (AUTO/MANUAL) selector to the "MANUAL" position, and adjust the vertical hold control.

Slow Tracking Control

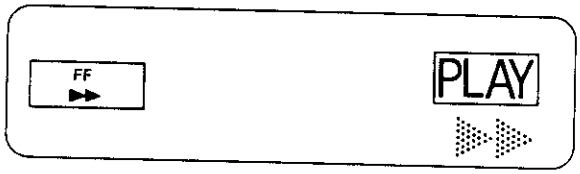
- When noise bars appear during Super Still, Super Still Advance or Super Fine Slow playback, switch over to slow playback and adjust the Slow Tracking Control to reduce the noise bars.
- It may not be possible to eliminate the noise bars completely.



Memory/Search Button
When this button is pressed once, the Memory Indicator "M" will light up, and when it is pressed one more time, the Search Indicator "S" will appear instead. When it is pressed a third time the Search Indicator "S" will disappear.

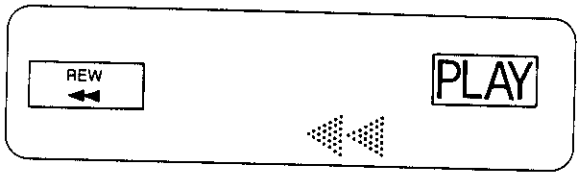
7 Cue Playback

When the Fast Forward ▶▶/Cue ⏩ Button is kept pressed while the VTR is in the playback mode, the tape will be played back in forward direction at about 5 times normal playback speed.



8 Review Playback

When the Rewind ◀◀/Review ⏪ Button is kept pressed while the VTR is in the playback mode, the tape will be played back in reverse direction at about 5 times normal playback speed.

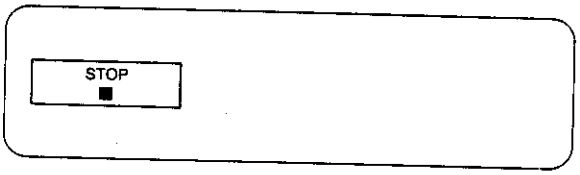


To make possible Cue or Review playback without having to keep the respective button pressed, first press the Memory/Search Button so that the Search Indicator "S" appears in the Multi-Function Display, and then press the Fast Forward ▶▶/Cue Button ⏩ or the Rewind ◀◀/Review ⏪ Button.
To switch the VTR back to normal playback, press the Play Button (▶).

- When Cue or Review playback continues for more than 10 minutes, the VTR switches back to the normal playback mode.

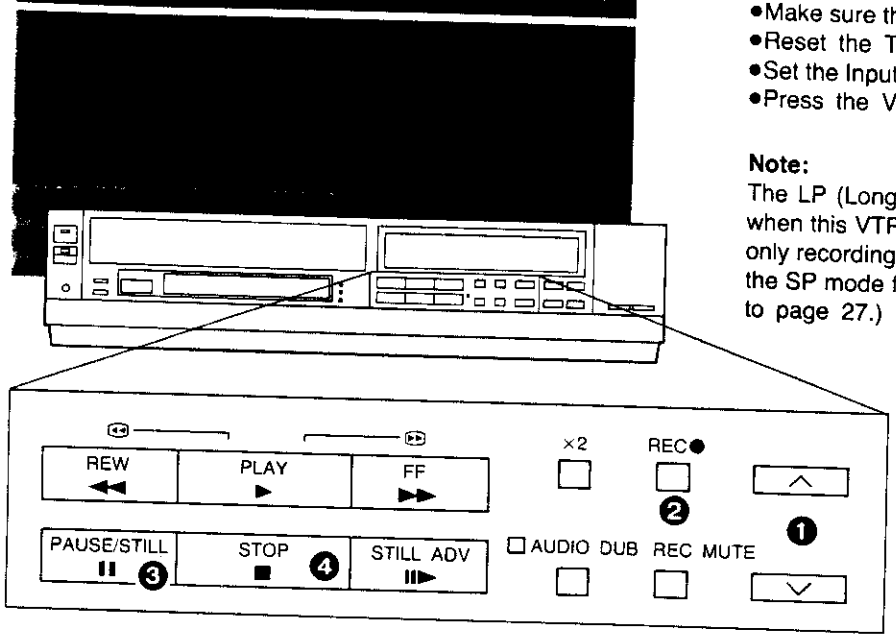
9 To Finish Playback

Press the Stop Button (■) to stop the playback.



- The sound will be played back only during normal playback.
- If you leave the VTR in the still playback mode for more than 5 minutes, the VTR will automatically switch over to the Stop mode, to protect the tape and the video heads.
- Noise which takes the form of horizontal bars appears on the TV in the Cue and Review playback modes. This is not an indication of a malfunction.
- The top of the picture may become distorted in the Cue or Review mode. This is not an indication of a malfunction.
- When the picture rolls vertically in the Cue or Review mode, adjust the vertical hold control on the TV set.

RECORDING FROM A TV BROADCAST SIGNAL



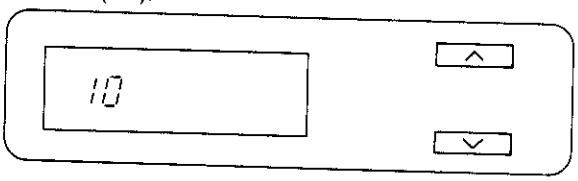
Preparation

- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Make sure that the "Timer Record" Switch is set to "Off".
- Reset the Tape Counter to "0000".
- Set the Input Signal Selector to "Tuner".
- Press the VTR/TV Selector to "VTR" position.

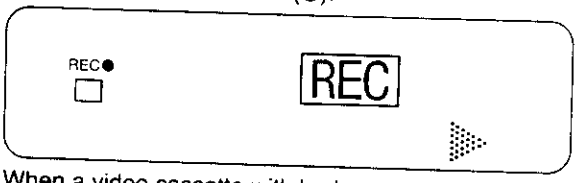
Note:

The LP (Long Play) mode of this VTR can only be used, when this VTR is used as a Hi-Fi Audio Recorder for audio only recordings. Be sure to set the Tape Speed Selector to the SP mode for normal video recording. (For details, refer to page 27.)

❶ Select on the VTR, the programme position (channel) to be recorded. In order to confirm proper reception, turn on the TV set and select the video playback channel (AV).



❷ Press the Record Button (●).

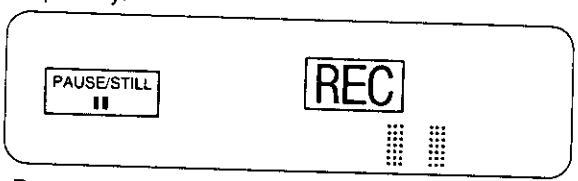


When a video cassette with broken out tab is inserted, it will be automatically ejected.

- During recording, the programme position (channel) on the VTR cannot be changed.

If you wish to Avoid Recording Unwanted Scenes

❸ Press the Pause/Still Button (❚❚) to stop the tape temporarily.



- Press the Pause/Still Button (❚❚) again to continue the recording.
- If you leave the VTR in the pause mode for more than 5 minutes, the VTR will automatically switch over to the stop mode to protect the tape and the video heads.

To Finish the Recording

❹ Press the Stop Button (■).

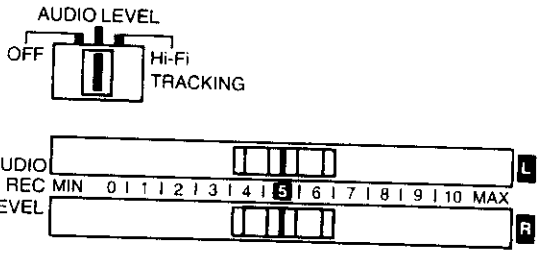
Recording One TV Programme While Watching Another

You can watch one programme on the TV while recording another on the VTR.

1. Record (following steps ❶ and ❷).
2. Press the VTR/TV Selector to "TV" position.
3. Select the desired programme position (channel) on your TV set.

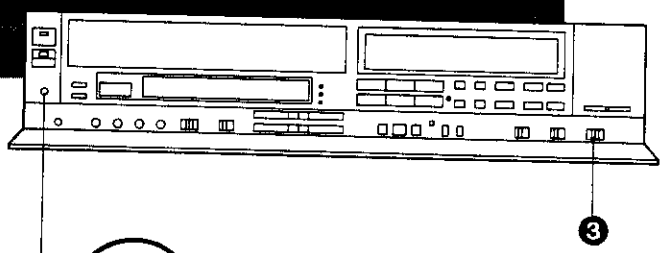
Adjustment of Audio Recording Level

Setting the Audio Level Controls to the centre "5" position (click stop) assures satisfactory audio recording results in most cases. When using the NV-H70 as a hi-fi audio recorder or when producing your own video tapes, it may be desirable to adjust the Audio Level Controls to some other position.



- Set the Audio Level Meter Selector to "Audio Level" and adjust the recording volume with the Audio Rec Level Controls, while observing the Audio Level Meters. The recording level for the right and left channel can be adjusted individually.
  (It is recommended to adjust so that peaks in the audio level reach about +3 dB.)
- If the Input Signal Selector is set to "Tuner/Simul", adjustment of the audio rec level is possible for the hi-fi audio tracks, but not for the "normal" audio track. If the Input Signal Selector is set to another position, the audio recording level for both hi-fi and "normal" audio tracks can be adjusted.

HI-FI AUDIO SYSTEM



Headphones
(Optional)

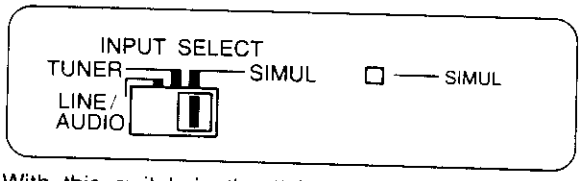
PHONES LEVEL

Headphones Output Level Control
When using headphones, the volume level can be adjusted with the Headphones Level Control.

Recording of Simulcast Sound

Preparation
- Connect your VTR to the Stereo Amplifier and FM Stereo Tuner as described on page 8.
- Tune the FM Stereo Tuner to the desired station.

❸ Set the Input Signal Selector to "Simul".
The "Simul" indicator lights up.
- The operation procedure is the same as for normal recording; see "Recording from a TV broadcast signal" on page 16.



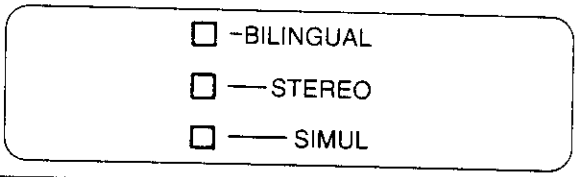
With this switch in the "simul" position, the sound portion of the TV broadcast signal will be recorded only on the "normal" sound track. And the stereo sound signal received via the FM tuner will be recorded on the hi-fi sound tracks.

Recording of Stereo and Bilingual Sound (For model NV-H70A only)

There is no special operation required; it is the same as for normal TV programme recording described on page 15. Recording of stereo and bilingual programmes is controlled automatically. It is not necessary to preselect any audio tracks.

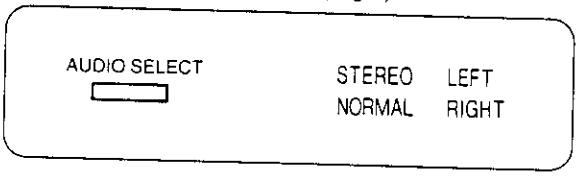
❶ When a bilingual programme is received, the "Bilingual" indicator will light up.

❷ When a stereo programme is received, the "Stereo" indicator will light up.



Playback (or Monitoring during Recording)

Press the Audio Playback Mode Selector until the Sound Track Indicator of the desired sound mode lights up. (See table at the bottom of this page.)

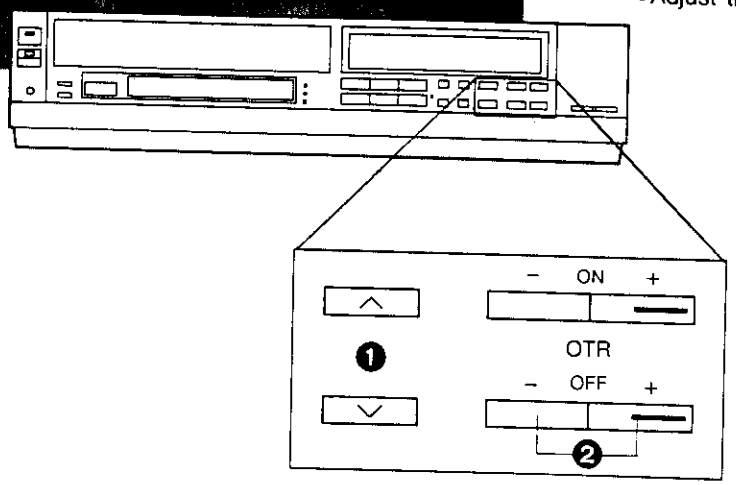


- If a video cassette recorded on a conventional VHS stereo video recorder is played back on this VTR, the sound reproduction of a stereo programme will be in mono. In case of a recorded bilingual programme, both language versions are reproduced mixed together (and are therefore not intelligible).

Audio Playback Mode / Sound Track Indicators	Playback of Programmes Recorded on the NV-H70 (or another VHS Hi-Fi Video Recorder)		Playback of Programmes Recorded on a Conventional VHS Stereo Video Recorder	
	Stereo Programmes	Bilingual Programmes	Stereo Programmes	Bilingual Programmes
STEREO	Left+Right Channels (Stereo)	CH1 from Left CH2 from Right	——	——
LEFT	Left Channel	Channel 1 (Main)	——	——
RIGHT	Right Channel	Channel 2 (Sub)	——	——
NORMAL	Mono	Channel 1 (Main)	Left+Right Mixed	CH1+CH2 Mixed

SUPER OTR FUNCTION (ONE-TOUCH TIMER RECORDING)

This convenient function makes it possible to easily programme the VTR for recording of TV programmes with immediate start or with start within 24 hours and with the starting time and ending time precisely to the minute, and the VTR will automatically turn itself off when the recording ends.

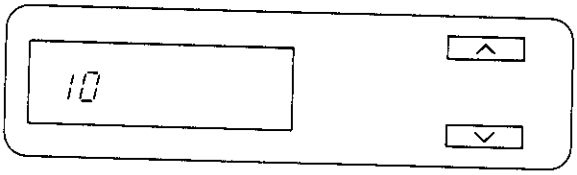


Preparation

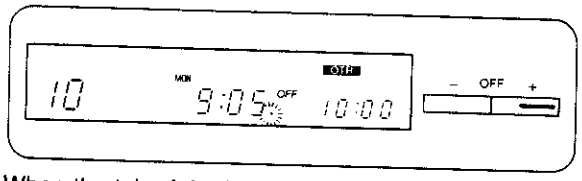
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Make sure that the clock shows the present time correctly.
- Set the Input Signal Selector to "Tuner".
- Confirm that the Tape Speed Selector is in the "SP" position.
- Press the VTR/TV Selector to "VTR" position.
- Adjust the audio recording level described on page 16.

OTR Function with Immediate Start

1. Select the programme position (channel) to be recorded.



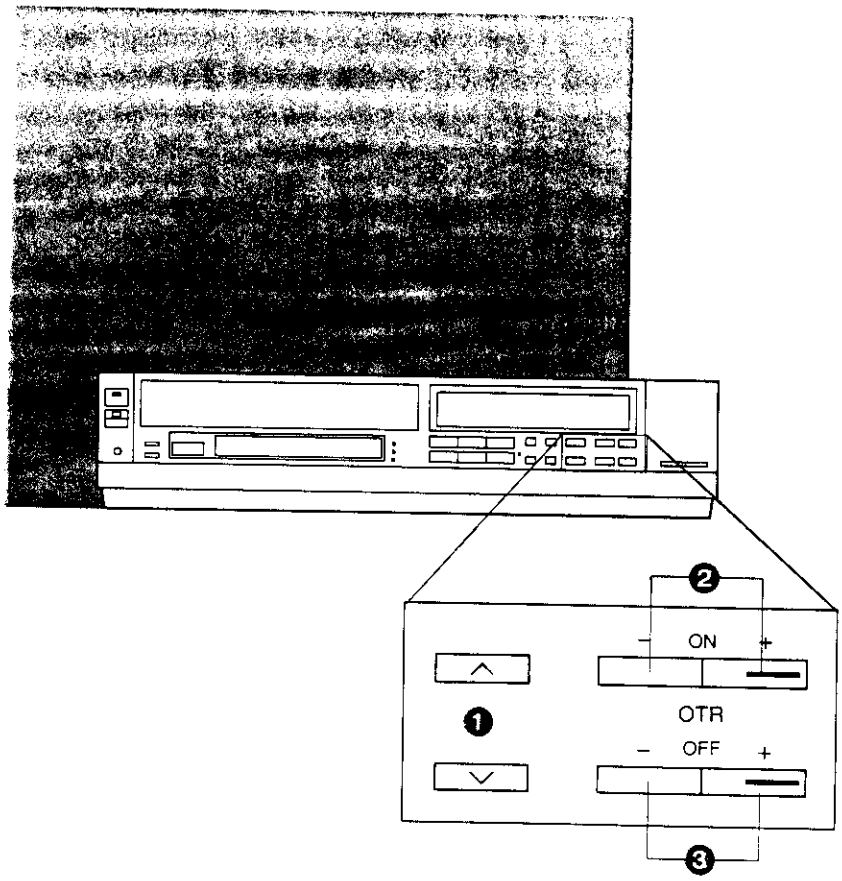
2. Set the desired ending time of the OTR by pressing Timer/OTR Off (+) or (–) Button. (For example, the present time is 9:05, and the ending time of the TV programme is 10:00.)



When the tab of the inserted video cassette is broken out, it will be automatically ejected.

- The "OTR" indicator will be displayed.
- The VTR will automatically switch off, when the OTR is completed. To turn the VTR on again, press the VTR On/Off Switch.

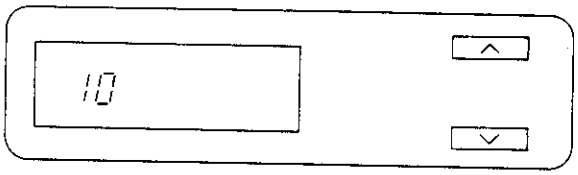
- When the tape reaches its end during an OTR the VTR will turn itself off.



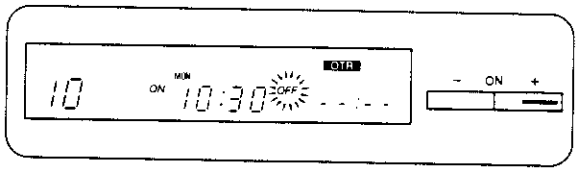
OTR Function with Delayed Start

It is possible to programme an OTR recording for a TV programme which will start immediately or within the next 24 hours.
(For example, OTR recording of a TV programme broadcast from 10:30 to 11:00.)

❶ Select the programme position (channel) to be recorded.

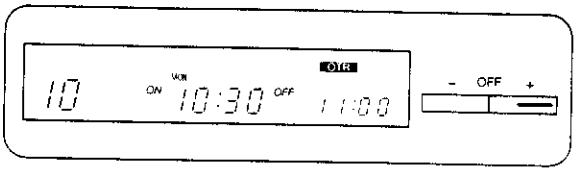


❷ Press the Timer/OTR On (+) or (−) Button to set the OTR starting time to 10:30.



- The "OTR" indicator will be displayed.

❸ Press the Timer/OTR Off (+) or (−) Button to set the OTR ending time to 11:00.



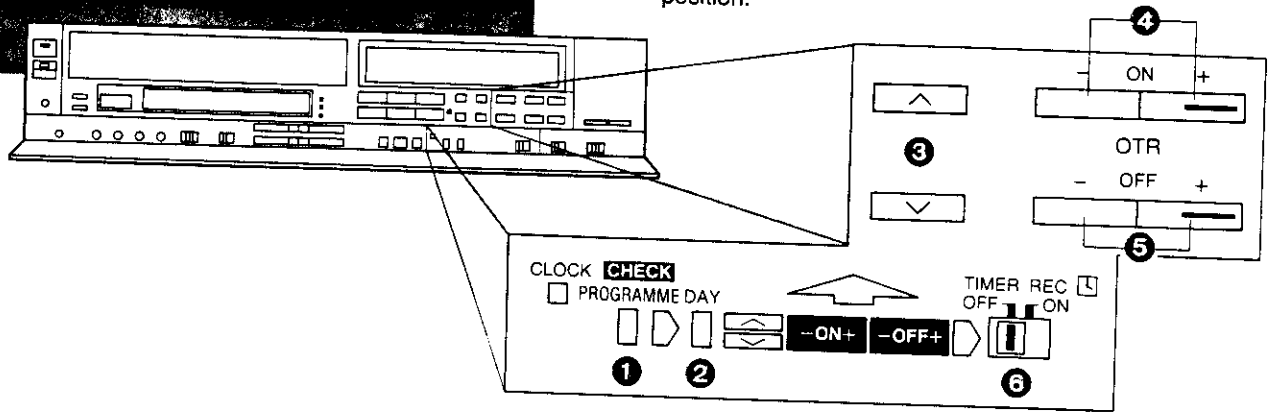
- After selecting the delay time for the OTR start in step ❷, the Timer/OTR Off Button must be pressed within 8 seconds to select the OTR duration, otherwise the selected delay time will be cancelled.
- The VTR will automatically switch off, when the OTR is completed. To turn the VTR on again, press the VTR On/Off Switch.

- Make sure that the OTR Function (One-Touch Timer Recording) does not overlap a programmed timer recording. An OTR always takes precedence over a timer recording.
- If you want to confirm the present time or the tape counter position before the programmed OTR is performed, or to check the tape counter position during the OTR, press the Programme Button. To return the display to the previous indication, press this button once more.
- It is possible to change the OTR starting time or the ending time until the recording starts.
- It is possible to perform any VTR operation (except Timer Recording) until the recording starts.
- It is possible to change the OTR ending time even during the recording.
- To interrupt an OTR, press the VTR On/Off Switch to turn the VTR off.
- When quickly and repeatedly pressing the Timer/OTR On (+) or (−) Button or the Timer/OTR Off (+) or (−) Button, the corresponding time indication changes in 1-minute steps. When it is kept pressed, the indication changes in 10-minute steps.

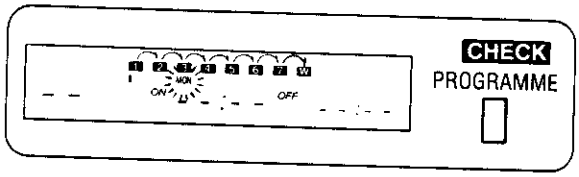
TIMER RECORDING

For Example:
Programme a timer recording for 2nd week, Tuesday, 20:30–21:00, on timer programme number 5. The present time is 9:05 on Monday.

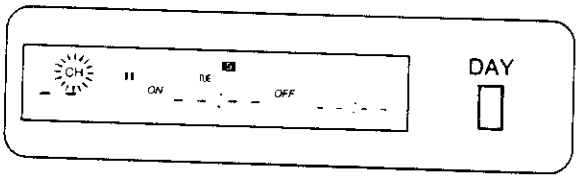
Preparation
- Make sure that the clock shows the present time correctly.
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch turn it on.
- Make sure that the "Timer Record" Switch is set to "Off".
- Set the Input Signal Selector to "Tuner".
- Adjust the audio recording level described on page 16.
- Confirm that the Tape Speed Selector is in the "SP" position.



❶ Press the Programme Button to select the timer programme number on which a timer recording is to be programmed.

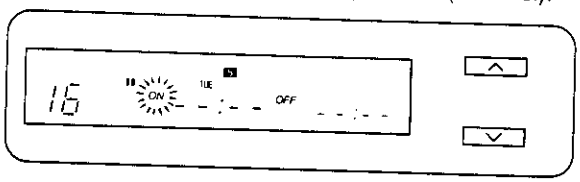


❷ Press the Day Button to set the 2nd Tuesday.

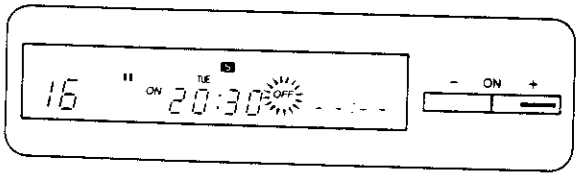


- The symbol "▮" means the first 7 days; "▮▮" means the following 7 days.

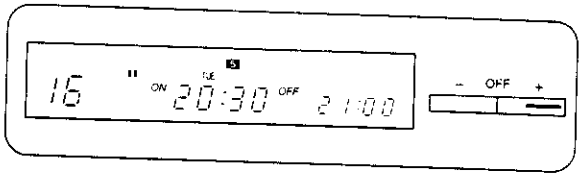
❸ Select the desired programme position (channel).



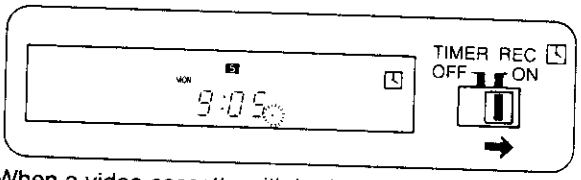
❹ Press the Timer/OTR On (+) or (–) Button to set "20:30".



❺ Press the Timer/OTR Off (+) or (–) Button to set "21:00".

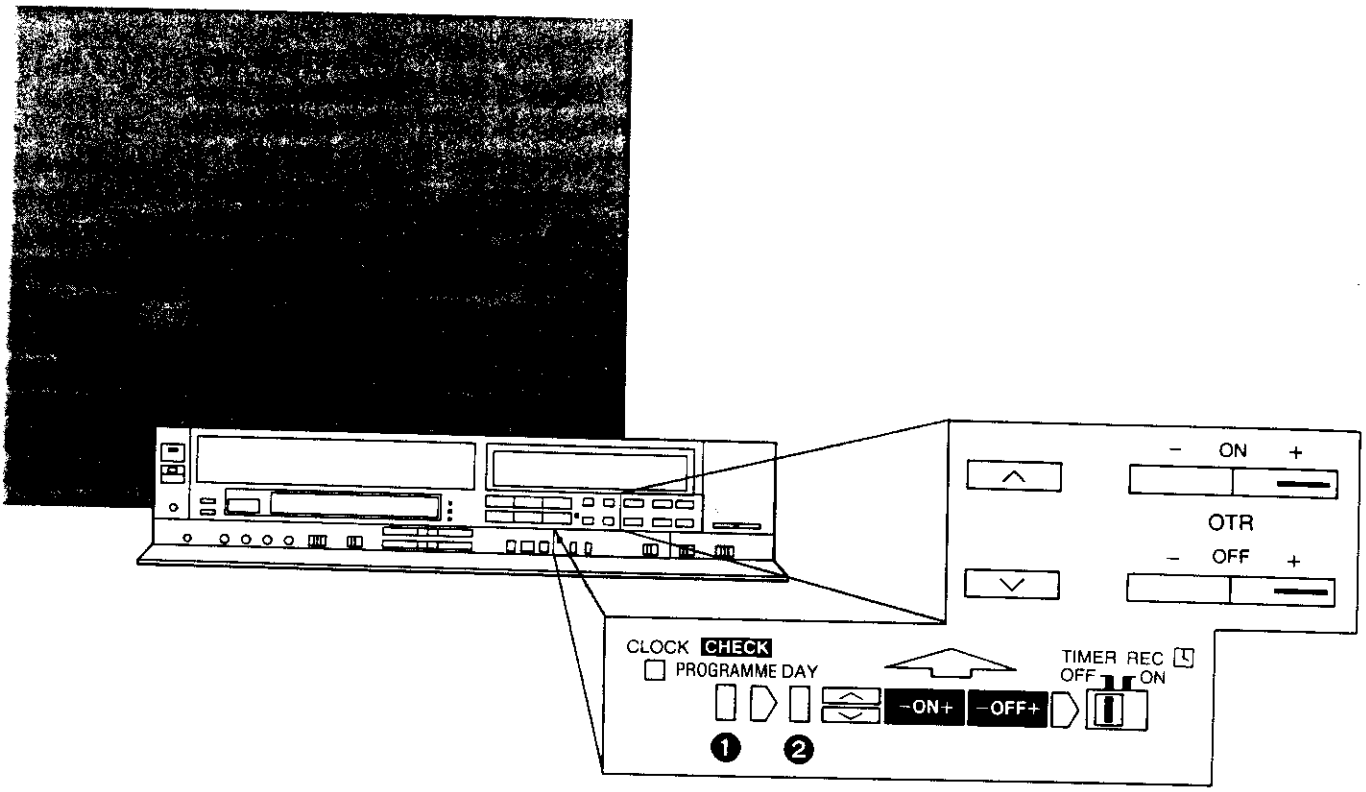


❻ Set the "Timer Record" Switch to "On".



When a video cassette with broken out tab is inserted, it will be automatically ejected.

- When quickly and repeatedly pressing the Timer/OTR On (+) or (–) Button or the Timer/OTR Off (+) or (–) Button, the corresponding time indication changes in 1-minute steps. When it is kept pressed, the indication changes in 10-minute steps.

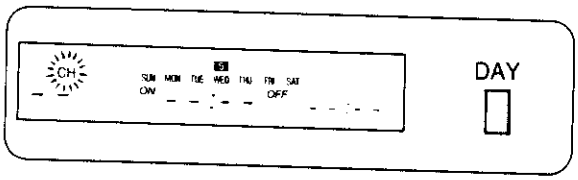


For Everyday Recording

Programming for everyday recording can be made on any of the timer programme numbers 1–7.

Execute the operation step ❶ as described on page 20.

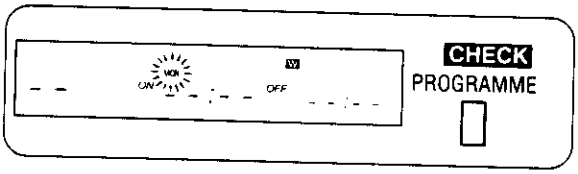
❷ Press the Day Button until all days are displayed.



Perform the operation steps ❸ to ❻ described on page 20.

For Everyweek Recording

❶ Press the Programme Button until "W" is displayed.

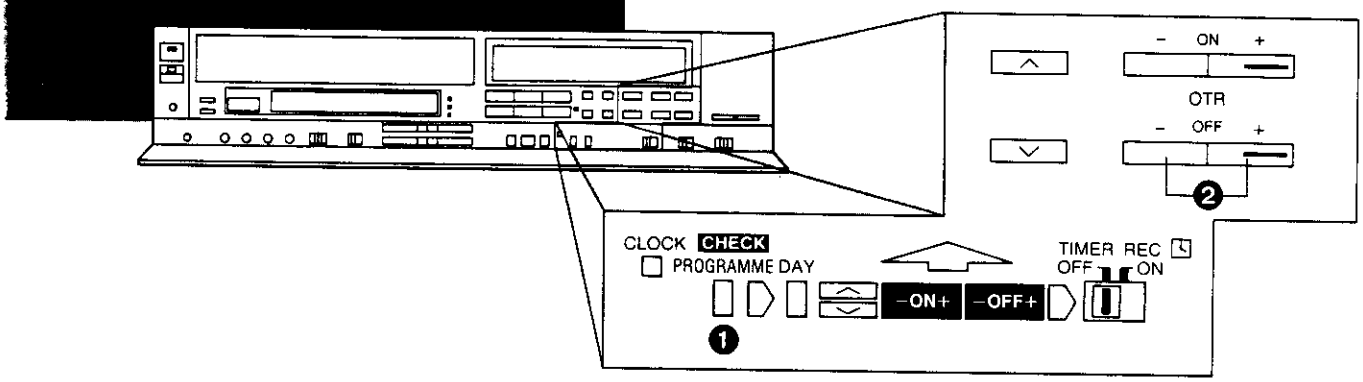


❷ Press the Day Button to select the day of the week, on which the programme will be broadcast.

- The symbols "▮" and "▮▮" do not appear when programming for everyweek recording.

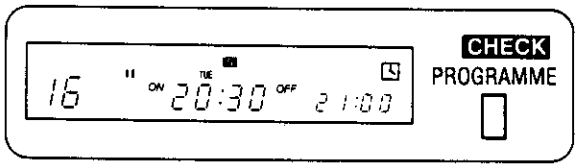
Perform the operation steps ❸ to ❻ described on page 20.

TIMER RECORDING (CONT'D)



To Confirm the Programme of a Timer Recording

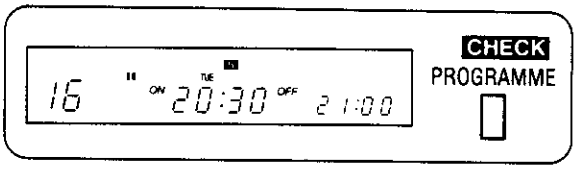
1. Select the programme number to be checked, by repeatedly pressing the Programme Button.
   The preset channel and start and ending times of the timer recording will be indicated for about 8 seconds.



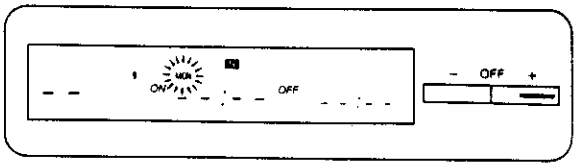
To Cancel a Timer Recording

Make sure that:
—the VTR is turned on,
—the "Timer Record" Switch is set to "Off".

1. Press the Programme Button repeatedly, until the number of the timer programme that you want to cancel is displayed.

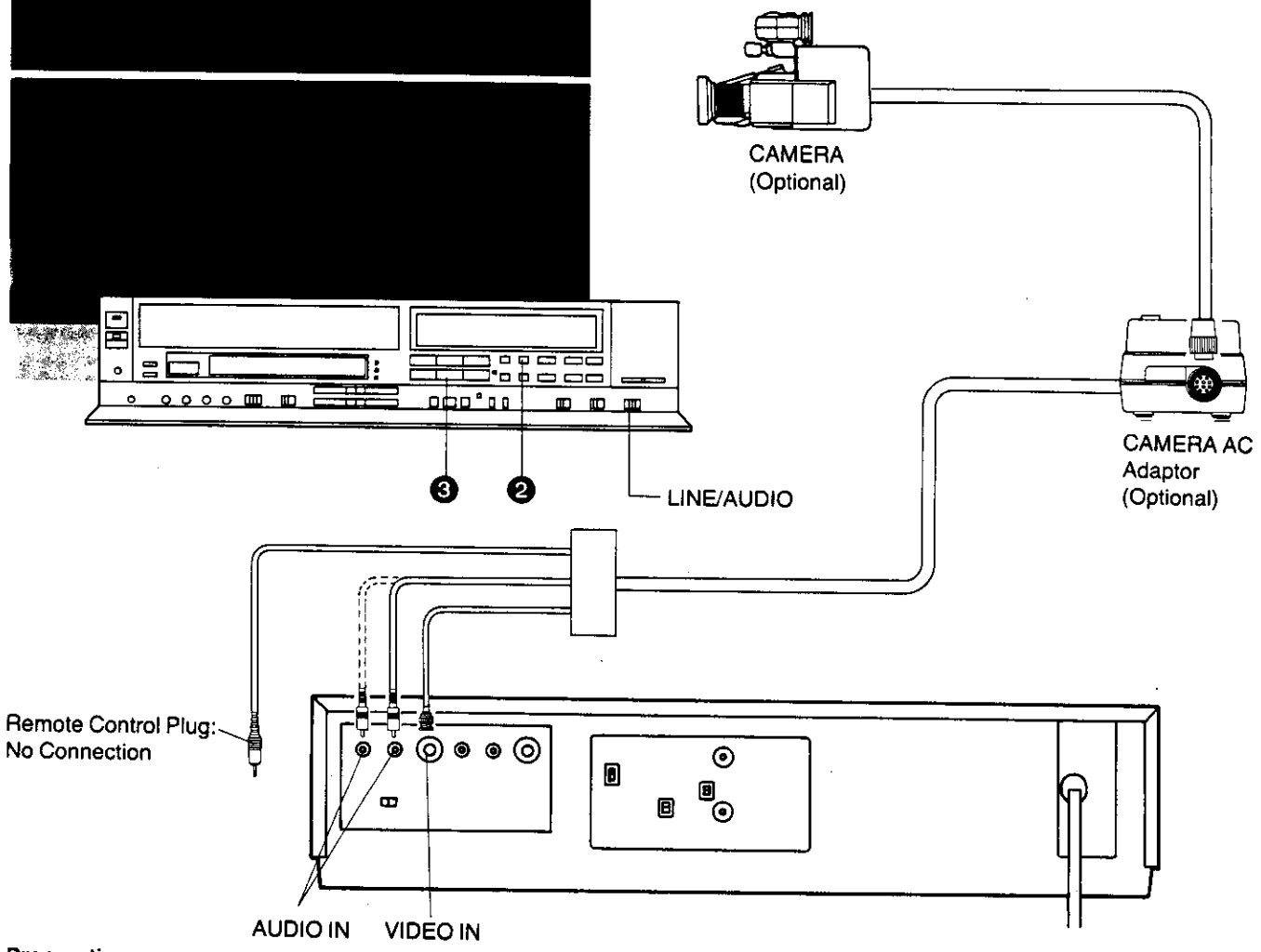


2. Press Timer/OTR Off (+) and (−) Buttons simultaneously for more than 3 seconds.



- It is impossible to confirm programmes of timer recordings while an OTR is being performed.
- To turn the VTR on and use it for playback or recording before the timer recording is performed, turn the Timer Record Switch Off.
- When the Timer Record Switch is set to "On" but no video cassette is inserted or no timer recording has been programmed, the Timer Recording Indicator will flash to inform that the timer recording cannot be performed.
- When the "Timer Record" Switch is set to "On", the VTR is turned off, the Timer Record Indicator "" will be displayed, and only the timer is left operating.
- At the programmed time, the recording will be performed automatically.
  The programmed TV programmes will be recorded in chronological order, regardless of the timer programme numbers.
- After the programmed timer recording has been made, set the "Timer Record" Switch to "Off", otherwise the VTR cannot be operated normally.
- During recording, the programme position (channel) on the VTR cannot be changed.
- When you want to watch TV after setting a timer recording, select the desired channel on the TV set.
- To cancel a timer recording during recording, set the Timer Record Switch to "Off".

CAMERA RECORDING



Preparation

- Connect the video camera via the Camera AC Adaptor to the VTR as shown in the illustration above.
- Insert a video cassette with the erasure prevention tab intact. When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Set the Input Signal Selector to "Line/Audio".
- Press the VTR/TV Selector to "VTR" position.
- Adjust the audio recording level described on page 16.
- Confirm that the Tape Speed Selector is in the "SP" position.

❶ Turn the Camera AC Adaptor on and make the necessary adjustments on the camera.
Refer to the operating instructions of the camera you are using.

❷ Press the Record Button (●) on the VTR to start recording.

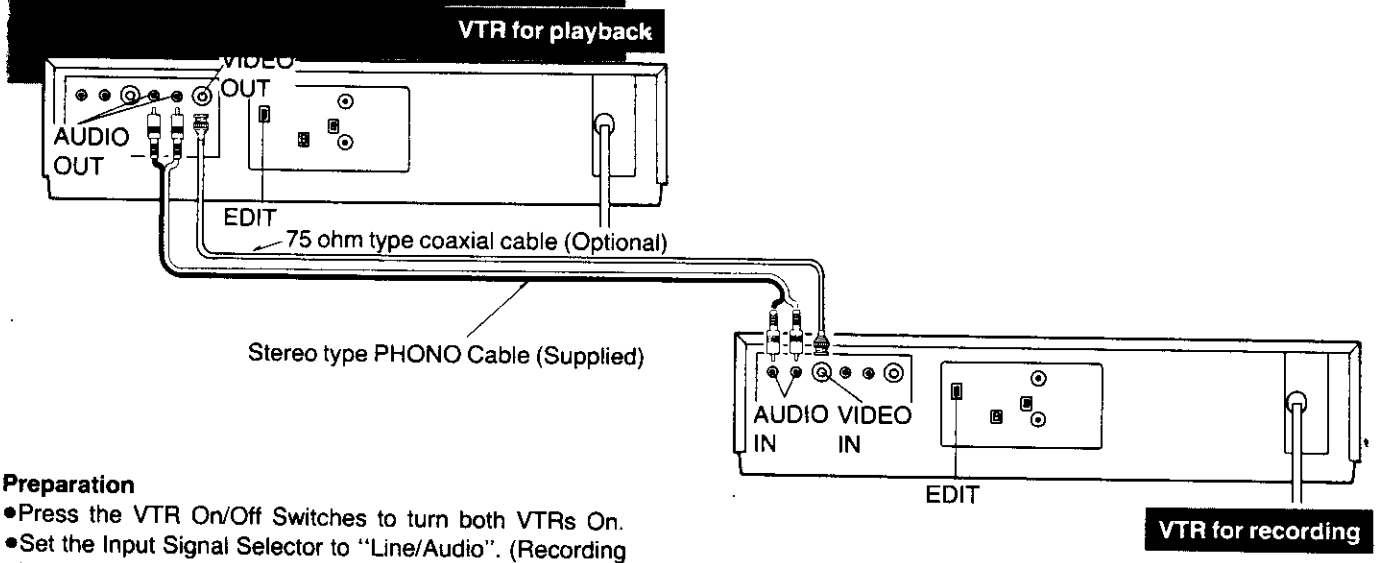
Avoid recording unwanted material:
Press the Pause/Still Button (❚❚) of the VTR, and the recording will stop temporarily. To restart recording, press the Pause/Still Button (❚❚), again.

❸ Press the Stop Button (■) on the VTR to stop the recording.

- For playback of a tape that was recorded via a camera, select the audio track on which the sound from the camera microphone was recorded by pressing the corresponding Audio Playback mode Selector Button.
- If you leave the VTR in the pause mode for more than 5 minutes, the VTR will stop automatically to protect the tape and the video heads.
- In the camera recording mode, the Channel Display will go off to indicate signal input from the Video/ Audio In Sockets.
- Even if the video camera is equipped with video recorder remote control functions, this VTR can not be remotely-controlled from the camera.

DUBBING (COPYING)

Dubbing (copying) from one video cassette to another.

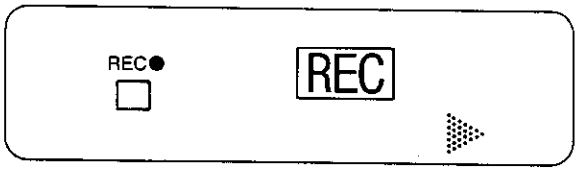


Preparation

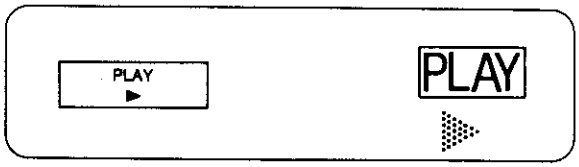
- Press the VTR On/Off Switches to turn both VTRs On.
- Set the Input Signal Selector to "Line/Audio". (Recording VTR)
- Connect the Audio Output Sockets on the playback VTR to the Audio Intput Sockets on the recording VTR with a stereo type PHONO cable.
- Connect the Video Output Socket on the playback VTR to the Video Input Socket on the recording VTR with a 75 ohm type coaxial cable (BNC connector).
- Make sure that the picture Detail Enhancer/Edit Selector of the VTR is set to EDIT position.

❶ Place the recorded cassette in the playback VTR and a blank video cassette with the erasure prevention tab intact in the recording VTR.

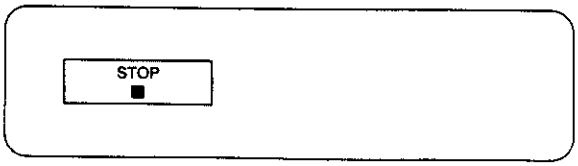
❷ Press the Record Button (●) on the recording VTR.



❸ Press the Play Button (▶) on the playback VTR.



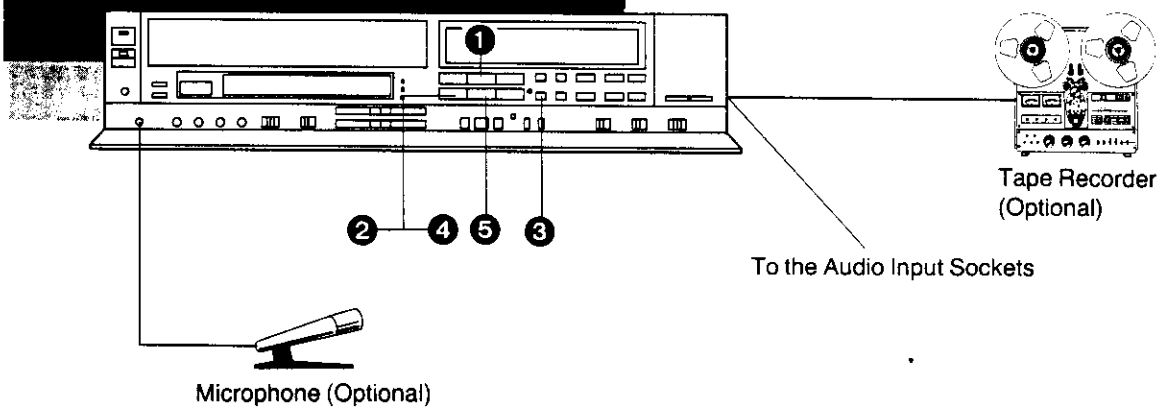
❹ Press the Stop Button (■) on both VTRs to stop the dubbing.



- To assure smooth, noiseless cuts when interrupting the recording, always use the Pause/Still Button (❚❚).
- To obtain smooth cuts when starting the recording from the stop mode:
  1. Play back the last part of the previously recorded material to confirm its ending point, and then press the Pause/Still Button (❚❚).
  2. Press the Record Button (●). (The VTR is still in the pause mode.)
  3. To start recording, press the Pause/Still Button (❚❚) again.
- The picture quality of a re-recorded tape is not as good as that of the original.
- To dub from a Hi-Fi VTR to a conventional Mono VTR, press the "Audio Playback Mode Selector Button" repeatedly until the "NORMAL" Audio Track Indicator lights up.

AUDIO DUBBING

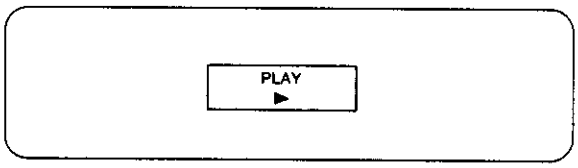
Note that the original sound on the "normal" (mono) sound track will be completely erased during audio dubbing.



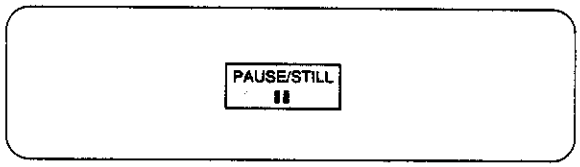
Preparation

- Insert a video cassette with the erasure prevention tab intact. When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Reset the Tape Counter to "0000".
- Turn the TV set on and select the video playback channel.
- Set the Input Signal Selector to "Line/Audio".

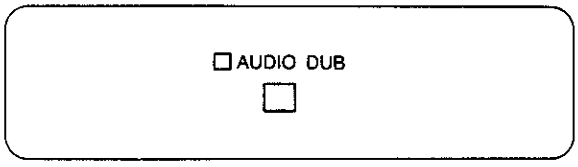
❶ Press the Play Button (▶) to look for the point where you want to start the audio dubbing.



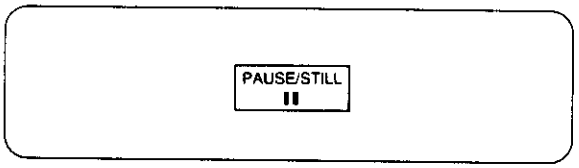
❷ Press the Pause/Still Button (❚❚) at the exact point where you want to start the audio dubbing.



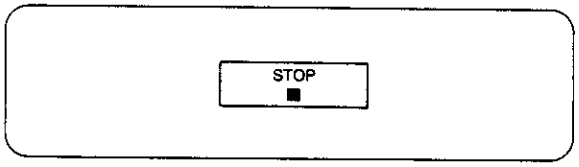
❸ Press the Audio Dubbing Button (the indicator light up).



❹ Press the Pause/Still Button (❚❚) once again to release the tape from pause, and at the same time start the operation of the audio source. The audio dubbing will start.

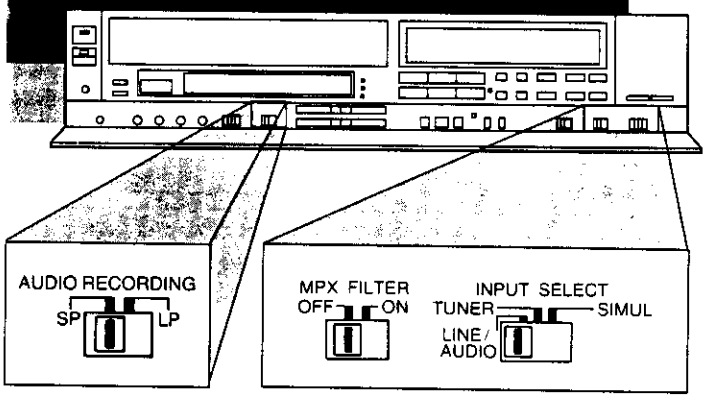


❺ Press the Stop Button (■) to stop the audio dubbing.



- Sound recorded by using the audio dubbing function is recorded on the "normal" audio track (always in mono).
- For playback, press the Audio Playback Mode Selector until "Normal" Indicator appears in the Audio Playback Mode Indicators.
- When a microphone is used for dubbing, do not place it near the speaker of your TV to prevent howling noise (acoustic feedback).
- If the erasure prevention tab of the cassette is missing, no audio dubbing can be made.
- Audio dubbing is impossible when the Tape Speed Selector is in the "LP" position.

USING THE NV-H70 AS A HI-FI AUDIO RECORDER



Preparation

- Connect the VTR to the hi-fi audio system. (Example of a connection diagramme is shown).
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Switch on the hi-fi audio system and select an audio source.
- For "Adjustment of Audio Recording Level", see page 16.

Tape Speed Selector (Audio Recording)

For recording either of two tape speeds can be selected. During playback the recorder selects automatically the correct speed.
Select the desired tape speed with the Tape Speed Selector before recording.

- Set to the "SP" position for normal speed.
- Set to the "LP" position for slow speed.
  The corresponding indicator (SP or LP) lights up during recording and playback in the Multi-Function Display.

When the VTR is in the LP mode, only the Hi-Fi audio track can be recorded or played back.

- The usual video functions (recording or playback of the picture) are inoperable in the LP mode.

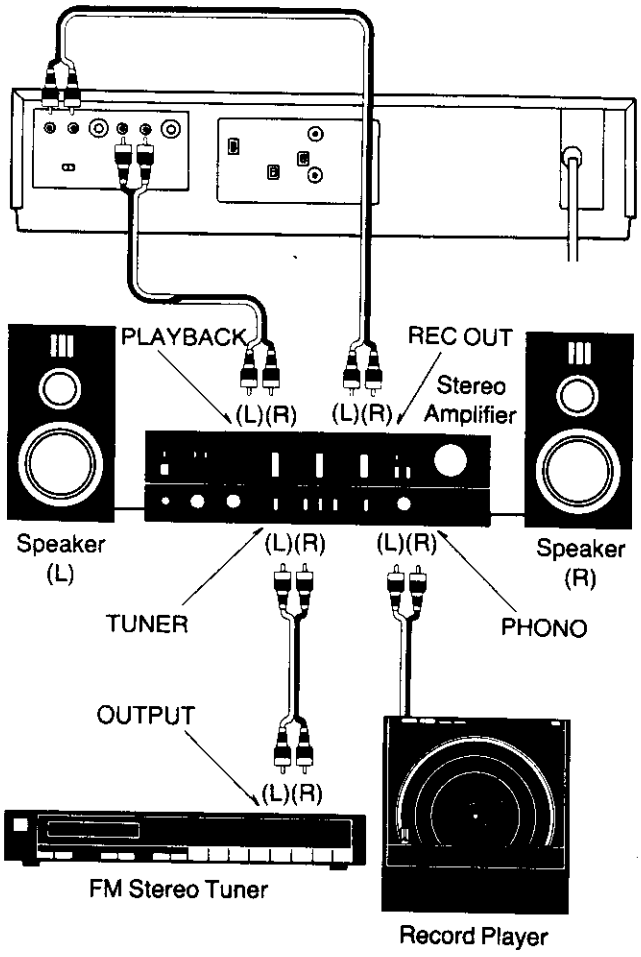
Hi-Fi Audio Recording

Note: Selection of an audio track is not necessary for recording.

❶ Set the Input Signal Selector to "Line/Audio".

- To start the recording, press the Record Button (●).

❷ To achieve smooth transitions between adjoining recordings, see notes on page 24.

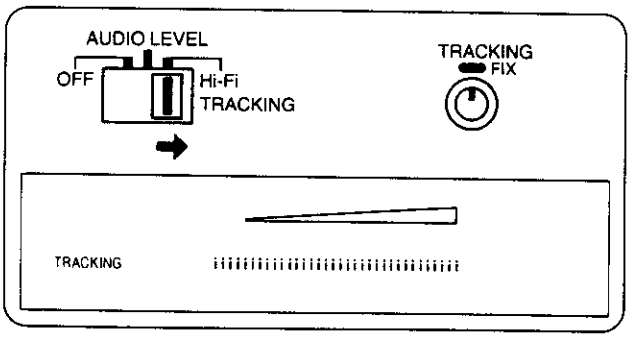


Hi-Fi Audio Playback

- To start the playback, press the Play Button (▶).
- Press (for playback of both mono and stereo recordings) the "Audio Playback Mode Selector Button" repeatedly so that the "Stereo" Audio Track Indicator lights up.

Adjustment of the Hi-Fi Audio Tracking

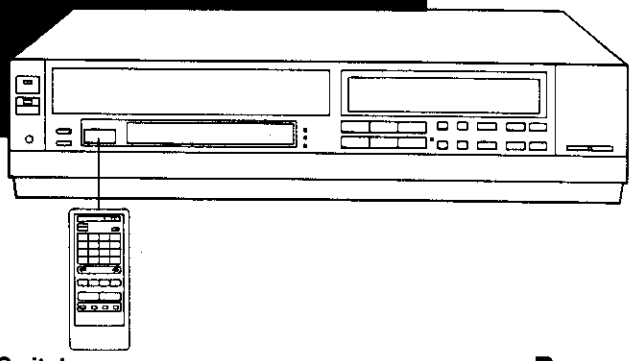
This adjustment may be necessary when playing back a tape which was recorded on another hi-fi VTR.
Set the Audio Level Meter Selector to "Hi-Fi Tracking" and slowly slide the Tracking Control while observing the Audio Level Meter, for highest possible meter indication.

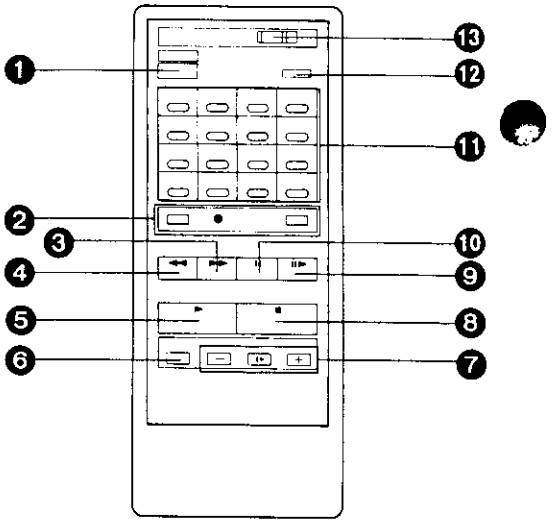


- If the sound is impaired by high frequency distortion when recording from an FM tuner, set the MPX Filter switch to "On". If there is no distortion when recording from an FM tuner, and for all other recordings, set this switch to "Off".

INFRA-RED REMOTE CONTROLLER

Part Number: VEQ0461





1 VTR On/Off Switch
For turning the VTR on and off.

2 Record Buttons (●)
To start recording, press the both buttons simultaneously.

3 Fast Forward ▶▶/Cue ⏩ Button
When this button is kept pressed during playback, the VTR changes over to the Cue playback mode.

4 Rewind ◀◀/Review ⏪ Button
When this button is kept pressed during playback, the VTR changes over to the Review playback mode.

5 Play Button (▶)

6 Double Speed Playback Button (×2)

7 Slow Button (▮▶)
Press the Slow Button for slow-motion playback at 1/12 of normal speed. The slow playback speed can be varied between 1/25 and 1/8 of normal speed by using the "+" and "−" Buttons.
Note:
If the VTR is left in the slow playback mode for more than 10 minutes, the VTR will automatically switch over to the stop mode, to protect the tape and the video heads.
- Adjust the Slow Tracking Control if necessary.

8 Stop Button (■)

9 Still Advance Button (▮▮▶)

10 Pause/Still Button (❚❚)

11 Programme Position (Channel) Selector Buttons

12 VTR/TV Selector

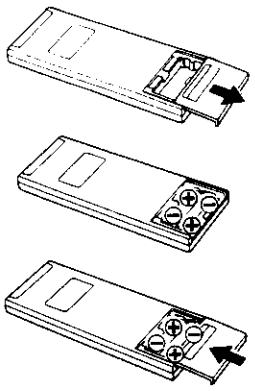
13 Remote Controller Switch
Set this switch to "On", to use the Remote Controller.

Power Source for the Infra-red Remote Controller

■ The Infra-red Remote Controller is powered by two IEC "R03" size batteries. The life of the batteries is about one year, however, it depends on the frequency of use. Inspect and if necessary, replace the batteries once a year.

CAUTION FOR BATTERY REPLACEMENT
- Load the new batteries with their polarities (⊕ and ⊖) aligned correctly.
- Do not apply heat to batteries, or internal short-circuit may occur.
- If you do not intend to use the Remote Controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new batteries together. (Also never use an alkaline battery with a manganese battery.)

Load the batteries as follows:



1. Remove the battery compartment lid.
2. Place two batteries in the battery compartment as indicated inside the battery compartment.
3. Replace the lid.

Note:
- The infra-red beam should be transmitted directly at the Infra-red Remote Control Receiver on the front of the VTR.
- Direct sunlight may interfere with the beam.
- The lightsensing angle of the Infra-red Remote Control Receiver window in the VTR is about 40°.
- The unit should be used within a range of about 7 meters from the front of the VTR.

BEFORE REQUESTING SERVICE

Before requesting service, check the following points once again.

SYMPTOM	CAUSE	REMEDY
Power doesn't turn on.	Mains lead is not connected.	Connect mains lead to mains outlet.
	The "Timer Record" Switch is set to "On".	Set the "Timer Record" Switch to "Off".
Power is on but unit doesn't operate.	Dew condensation inside the VTR.	Wait until the Dew Indicator " $\mathcal{d}$ " goes off.
	Safety devices are operating.	Turn off the VTR On/Off Switch, disconnect mains cord from outlet, then reconnect mains cord to mains outlet and turn on the VTR On/Off Switch again.
TV programmes cannot be recorded.	Connection of aerial lead is not correct.	Connect aerial lead correctly.
	Reception channel is not properly tuned.	Tune reception channel.
	The Input Signal Selector is not set correctly.	Set the Input Signal Selector to "Tuner".
OTR Function (One-Touch Timer Recording) cannot be performed.	Clock is flashing "0:00".	Set clock to present time.
Unattended timer recording cannot be performed.	Recording start or recording stop time setting is incorrect.	Set recording start and recording stop time correctly.
	The "Timer Record" Switch is set to "Off".	Set the "Timer Record" Switch to "On".
	Clock shows incorrect time.	Adjust clock to present time.
	Clock is flashing at "0:00".	Set clock time and perform timer setting.
	The Input Signal Selector is not set to "Tuner".	Set the Input Signal Selector to "Tuner".
Unattended timer recording cannot be programmed.	The OTR is now being performed.	Programme the timer recording after the OTR has finished.
If you attempt to carry out Recording, Timer Recording, or OTR, the cassette will be automatically ejected.	Accidental erasure prevention tab on the cassette is broken out.	Cover tab hole with adhesive tape.
Recording via external input terminals cannot be performed.	The Input Signal Selector is not set correctly.	Set the Input Signal Selector to "Line/Audio".

BEFORE REQUESTING SERVICE (CONT'D)

SYMPTOM	CAUSE	REMEDY
Playback picture is not reproduced.	Connection with television set is not correct.	Connect the VTR to the television set correctly.
	TV set is not tuned to the video playback channel.	Tune TV set to the video playback channel of the VTR.
Recorded programmes with two-channel sound (stereo, bilingual or Simulcast) can not be played back.	Setting of the Audio Playback Mode Selector Button is not correct.	Press the Audio Selector Button to select the desired audio playback mode. (See page 17)
	Hi-Fi tracking is misaligned.	Precisely align the tracking of the hi-fi sound track.
No sound is reproduced.	During recording, the Audio Rec Level Control was not adjusted correctly.	Perform the recording with the Audio Rec Level Control adjusted correctly.
Playback picture is not in colour. Playback picture has large amounts of "snow".	Reception channel was not adjusted correctly during recording.	Readjust reception channel correctly.
	TV set is not properly tuned to the video playback channel of the VTR.	Properly tune the TV set to the video playback channel of the VTR.
	The video heads are clogged with dirt.	Consult qualified service personnel.
	The video heads are abraded.	Consult qualified service personnel.
	Tape is old and/or defective.	Use new tape.
Audio dubbing cannot be performed.	No picturer were is recorded on the tape.	Perform audio dubbing after performing recording of pictures.
	Accidental erasure prevention tab on the cassette is broken off.	Cover tab hole with adhesive tape.
Remote Controller does not work.	Remote Controller is not being pointed at Infra-red Receiver window on the VTR.	Point the Remote Controller at Infra-red Receiver Window on the VTR.
	Distance is too far.	Use the Remote Controller within 7 m from the VTR.
	An obstacle is between Remote Controller and VTR.	Remove obstacle.
	Batteries are exhausted.	Replace batteries.
	Battery polarities (+, −) are reversed.	Insert batteries correctly.

CAUTIONS

Please read these cautions before you operate this VTR.

Avoid Sudden Changes in Temperature

If the VTR is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the VTR. In this case, the Dew Indicator " σ " will flash on and off and the VTR will not operate except the Eject Button.

Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep away from High Temperature

Keep the VTR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Keep Magnets away

Never bring a magnet or magnetized object near the VTR because it will adversely affect the performance of the VTR.

No Fingers or Other Objects Inside

Touching internal parts of this VTR is dangerous, and may cause serious damage to the VTR. Do not attempt to disassemble the VTR. There are no user serviceable parts inside.

Keep Water away

Keep the VTR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, consult qualified service personnel.

Cleaning the VTR

Wipe the VTR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

Stacking

Place the VTR in a horizontal position, and do not place anything heavy on it.

Video Head Clogging

The video heads are the means by which the recorder places picture signals on the tape during recording, and reads picture signals from the tape during playback. If these heads become dirty and clogged from long use, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

If Dew Condensation Forms in the VTR

Condensation may form in the VTR if:

- The VTR is in a room where the heater has just been turned on.
- The VTR is in a room with steam or high humidity.
- The VTR is brought from cold surroundings into a well-heated room.
- The VTR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

When dew forms in the VTR: (Refer to page 5)

The Dew Indicator " σ " on the Multi-Function Display will flash on and off and all the function buttons except the Eject Button (⏏) are made non-operational to protect the tape and the video heads.

When the Dew Indicator flashes:

Take out the video cassette, leave the VTR turned on and let it remain at room teperature until this indicator disappears. Depending on the surrounding conditions, this may take several hours.

SPECIFICATIONS

NV-H70A, EA

Power Source:	NV-H70A: 240 V AC 50–60 Hz NV-H70EA: 230 V AC 50–60 Hz		
Power Consumption:	Approx. 35 watts		
Video Recording System:	2 rotary heads, helical scanning system		
Tape Speed:	23.39 mm/sec.		
Tape Format	VHS tape		
Record/Playback Time:	240 min. with NV-E240		
FF/REW Time:	Less than 5.5 min. with NV-E180		
VIDEO			
Television System:	CCIR: 625 lines, 50 fields, PAL colour signal		
Modulation System:	Luminance: FM azimuth recording Colour signal: converted subcarrier phase shift recording		
Input Level:	VIDEO IN (BNC);	1.0 Vp-p,	75 ohm, unbalanced
Output Level:	VIDEO OUT (BNC);	1.0 Vp-p,	75 ohm, unbalanced
	RF Modulated; NV-H70A:	VHF channel 0 or 1,	75 ohm, unbalanced
	NV-H70EA:	VHF channel 2 or 3,	75 ohm, unbalanced
AUDIO			
Input Level:	AUDIO IN (PHONO);	−10 dB,	more than 50 kohm, unbalanced
	MICROPHONE;	−70 dB	
Output Level:	AUDIO OUT (PHONO);	−8 dB,	less than 1 kohm, unbalanced
	HEADPHONES;	−30 dB,	8 ohm
Audio Track:	1 track (Normal-mono only), 2 channels (Hi-Fi sound-stereo)		
Video Horizontal Resolution:	Colour: more than 240 lines		
Signal-to-Noise Ratio:	Video; more than 43 dB		
Dynamic Range:	Audio; more than 90 dB (Hi-Fi audio track)		
Audio Frequency Response:	20 Hz–20 kHz (Hi-Fi audio track)		
Wow and flutter:	0.005% Wrms/Hi-Fi		
Operating Temperature:	5°C–40°C		
Operating Humidity:	35%–80%		
Weight:	NV-H70A: 8.4 kg NV-H70EA: 8.2 kg		
Dimensions:	430 (W)×99 (H)×364.5 (D) mm		
Standard Accessories:	1 pc. DIN-DIN coaxial cable 1 pc. Infra-red remote controller 2 pcs. Stereo type PHONO cable		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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